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Crosley Dealers In N.Y. Drive For Trade-In Market

Distributor Will Give Dealers Two-Thirds of Trade-In Allowance

NEW YORK CITY—A two-month drive to boost last-of-the-year refrigerator sales by concentrating on replacement of units sold previous to 1935 is being staged by Crosley Distributing Corp. here.

This campaign is aimed at the replacement of Crosley boxes, only, but with well over 100,000 "Shelvadors" in the field due for replacement, the company feels that the time is ripe to contact these old Crosley users regarding a new and up-to-date refrigerator.

The problem of selling the replacement idea to these users is being attacked from two different angles. First, the company itself is sending out a direct mail solicitation to replacement prospects on the records of the firm's service department. Secondly, the company is urging its dealers to follow up this lead by direct contact with these old customers, either by letter, phone, or personal call.

Working details of the plan call

(Concluded on Page 16, Column 1)

'School Days' Ready For Norge Men

DETROIT—Norge distributors and their sales and service will put in a busy and instructive five days beginning Monday, Dec. 4, when they converge on Detroit for their annual convention augmented this year by a four-day merchandising clinic, the detailed program just announced indicates.

Convention proper will last one day only, Dec. 4, and will cover the showing of 1940 Norge refrigerators, ranges, laundry equipment, and commercial refrigeration. Scene of this event will be the Players' Club.

Monday's program will be opened with an introductory address at 9:45 a.m. by M. G. O'Harra, vice president

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Bureau Promotion Will Compare '30 & '40 Models

NEW YORK CITY—"Twice the Value at Half the Cost"—a slogan based on comparison of 1940 electric refrigerators with models of other years—will keynote the Modern Kitchen Bureau's electric refrigerator campaign for the coming year.

This message will be put across pictorially by calendars which run from 1940 back to 1930 and copy which makes definite reference to early refrigerators. Features of the new models are analyzed, and six outstanding features are brought forward as representing the greatly increased values afforded by modern electric refrigeration.

A plan book which fully describes the operation of a complete sales

(Concluded on Page 16, Column 2)

McEwan Is N.Y. Frigidaire Household Sales Mgr.

NEW YORK CITY—E. E. McEwan has been appointed household sales manager for Frigidaire in the New York district. He entered the refrigeration industry in Detroit in 1926, and came to New York City in 1935. Mr. McEwan was formerly manager of Frigidaire's air-conditioning department in the New York area.

'Old Timers' Recount Ups and Downs Of Industry's Pioneering Years

DETROIT—The days when household electric refrigeration was a struggling infant industry lived again in retrospect last week, when some of its pioneering spirits got together as guests of the Detroit section of American Society of Refrigerating Engineers, to reminisce over their trials and triumphs of two score and more years ago.

In the tradition of "Old Timers," they recalled the days when the "wise men" said refrigeration by electricity would never become commercially practical in the home, when national magazines wouldn't accept refrigerator advertising, when valves alone weighed as much as the whole unit does today—and when every service call held a new experience, humorous today but deadly serious then.

A number of those present could trace their beginnings in refrigeration long before a household electric refrigerator was being thought of.

But, much as they relish their part in the industry's past, they look with true pioneering spirit to the future—to the development of new inventions, new sales plans, and new markets that will send household refrigeration far beyond any marks it has achieved up to now.

Here are excerpts from the long series of "inside stories" of early-industry happenings related by the "Old Timers:"

'Experts' Said Industry Had No Future—E. T. Williams

The household refrigeration industry was up against plenty of problems in the early days, and many of the engineering "headliners" back around 1918 freely predicted that "there was no future in household refrigeration," recalled E. T. Williams, veteran refrigeration engineer and one of the real pioneers.

He mentioned the gloomy outlook of John E. Starr, who advised in a paper published around 1918 on the household refrigerating machine that there was "no use wasting time on its development." Knotty problems of expansion valve draw, compressor capacities, and insufficient head pressure were considered "too much to overcome in developing the household machine."

Mr. Williams described the bulky parts used in the old refrigerating machines, saying that the flywheel of some of the old jobs weighed as much as the modern compressor.

About 1920, he said, the engineering of household machines was beginning to approach and solve those problems of weight and design that had stymied the industry up to that time. "The men who came along to fully develop household refrigeration deserve full credit for the whole industry's progress," Mr. Williams said.

"The further development is not up to the 'old-timers,' the pioneers," he finished, "but squarely up to the 'young fellows' who will have in their hands the improvement and development of the refrigeration industry."

All Blame, No Praise, Is Engineer's Fate—Peltier

Frank Peltier, who was initiated into the refrigeration fraternity by E. T. Williams, and is now chief refrigeration engineer for Philco, observed that "there is no reward in the refrigeration industry for the engineer."

"The salesmen," he said, "clean up the money, while the engineer receives the backlash from the management." In a joking way he told how the management accuses the engineer of "spending too much money if the model is not a howling success, or of spending too little money and too much time if the model does happen to catch on with the public."

Perham Recalls Allowance For 'Ignorance' Factor

Reaching way back in his memory of the industry, Deane E. Perham, secretary of the Chicago Master Steamfitters Association, told of his experiences with the Automatic Refrigeration Co. of Hartford, Conn., going into quantity production of automatic refrigerating machines some 30 years ago.

"The parts we used in those days were really heavy," Mr. Perham said. "The high-pressure cut-off, for instance, weighed from 25 to 30 lbs. The motor-operated valves were also huge affairs as compared to the solenoid valves which take their place today."

He recalled that the machines manufactured by the company he was with in 1906 had just about the same parts that the modern refrigeration machine has. "Big difference," he said, "is that today we

(Continued on Page 10, Column 3)

Polk Directs St. Louis Kelvinator Branch

ST. LOUIS—Graham Polk will manage the Kelvinator branch to be established here shortly. New branch will be located in the Mart building at 401 S. 12th St. Stocks of Kelvinator and Leonard electric refrigerators, as well as electric ranges, water heaters, washers, and ironers will be established in the new branch.

S. F. Baker Is New Sales Mgr. For Williams Co.

SAMUEL F. BAKER

* * *

BLOOMINGTON, Ill.—Samuel F. Baker has been appointed general sales manager of Williams Oil-O-Matic Heating Corp., and in this capacity will be directly responsible for sales of Oil-O-Matic oil burner, Ice-O-Matic refrigeration units, and Air-O-Matic air-conditioning equipment.

A graduate mechanical engineer from the University of Kansas, Mr. Baker spent a few years in engineering work before entering the retail sales field. He joined the sales organization of Ford Motor Co. and achieved the highest Ford sales record of any man in the country.

(Concluded on Page 16, Column 3)

Ready For a Xmas Campaign

Here is Kelvinator's bid for holiday refrigeration business—a special Christmas model of 6.25-cu. ft. capacity, with five-piece matching oven-proof pottery set, 13 sq. ft. of shelf area, and an unrefrigerated vegetable bin providing five bushels of food storage space. An attractive medallion, appropriately engraved, personalizes the gift.

Program Details Given for Locker Stores Meeting

Many Authorities Will Speak At Des Moines Convention Dec. 7-9

DES MOINES, Iowa—A jam-packed program of informative talks, films, and discussions, as well as a full round of "extra-curricular" activities, has been prepared by the provisional committee for the first national convention of the proposed National Refrigerated Locker Association to be held here Dec. 7, 8, and 9.

Highlights of the educational program will be the forum on frozen food merchandising scheduled for the afternoon of Dec. 8, and the round table discussion to be held that same night.

Numerous manufacturers of equipment and supplies for the refrigerated locker and frozen food industries will exhibit their products at the convention.

A more detailed discussion of the convention program follows:

After the addresses of welcome on the opening day—Mayor Mark Conkling of Des Moines, H. W. Foskett, president of the Des Moines Chamber of Commerce, and Ed. G. Squire, president of the Iowa Refrigerated Locker Association will do the honors—a permanent conference chairman will be elected. This chairman will then appoint a committee for organization of the national association, instructing the members as to their duties and the time that they must report.

Following the luncheon, M. T. Rogers, Dewey & Almy Chemical

(Concluded on Page 6, Column 4)

Westinghouse Makes Plans For Showings

MANSFIELD, Ohio — Westinghouse's 1940 line of electrical appliances will be shown to dealers throughout the country at a series of preview meetings starting Jan. 2, reports Frank R. Kohnstamm, sales manager of the merchandising division.

The company's entire program has been stepped up in anticipation of a substantial sales gain next year, Mr. Kohnstamm said. Two of the highlights of the program are an increased advertising appropriation to

(Concluded on Page 16, Column 2)

Special Xmas Model Added By Kelvinator

DETROIT—A special low-priced refrigerator, developed especially for the Christmas season, is being introduced this month by Kelvinator dealers throughout the country.

The "Christmas Special" incorporates a medallion appropriately engraved to personalize the gift, plus a special-equipment set consisting of five pieces of matched oven-proof pottery. The new model has 13 sq.

(Concludea on Page 16, Column 3)

Mart Appliance Sales Up 43% In October

CHICAGO—Major and household electrical appliance sales at wholesale by firms represented in the Merchandise Mart amounted to $1,526,525, to show an increase of 6% over the September figure of $1,439,685, and 43.5% over the October 1938 aggregate of $1,063,625, according to the Mart's monthly

(Concluded on Page 14, Column 2)

New Buying Factors Should Bolster Household Refrigerator Market

Frigidaire Official Outlines Where Sales Can Be Expected and Cites Need For Greater 'Creative Selling Power'

Editor's Note: The following condensed version of a talk given before the meeting this month of the Wisconsin Utilities Association by Frank C. Lyons, an executive of Frigidaire, outlines the future market for household refrigerator sales.

Mr. Lyons has assembled the facts, figures, and history that serve well to allay any fears about "market saturation." His discussion of the replacement market is particularly enlightening.

By Frank C. Lyons, Frigidaire division, General Motors Sales Corp.

Every now and then someone expresses apprehension over the future of the mechanical refrigeration industry, the frequency of these opinions being determined to a large degree by the current state of the business and by the accuracy of the analysis of possibilities for refrigerator sales in the years ahead.

Let's consider a few figures that will help us visualize the sales job which has been achieved in the promotion of electric refrigerators and which may be used as a basis for consideration of potentialities for future sales.

From the inception of the electric refrigeration business to the end of 1933, the total sale of units amounted to 5,529,000. Since then the yearly record of sales appears as follows: 1,283,000 units in 1934; 1,568,000 in 1935; 1,996,000 in 1936; 2,310,000 in 1937; and 1,240,000 in 1938. This made a grand total of 13,926,000 electric refrigerator sales up to Jan. 1, 1939.

With deductions of 1,825,000 units for stocks and retirement, total electric refrigerators in use at the end of 1938 amounted to 12,101,000. Add to this the estimated sales for 1939 of 1,750,000 units, and you find that the sale of electric refrigerators has been a noteworthy accomplishment.

Perhaps instead of creating an optimistic view of the future, these figures give you an idea that we are approaching that uncomfortable point of market saturation when everybody who is going to buy has made his purchase and we must sit with our hands in our laps waiting and hoping for new customers to appear.

I do not believe there is any real threat of such saturation. The electric refrigerator business will continue to be one of the nation's liveliest industries for at least seven reasons that come to mind. These are the major reasons why we can expect sales to be made as readily in the years ahead as they have been in the past. In fact, with increasing acceptance of electric refrigeration, it may develop that sales may be effected with even greater ease.

The Wired Home Market

Market saturation is far from a reality when we see that there are still millions of wired homes now using ice for keeping foods. There are 23,420,000 wired homes in the United States and at the end of 1939 there will be somewhere in the neighborhood of 13,500,000 electric refrigerators in use. This leaves a theoretical market of more than 8,000,000 homes which have no electric refrigerator. And, remember, this figure does not remain stationary! Admittedly, a large portion of these represent the low income groups, but at the same time we will find in a good share of this theoretical 8,000,000 wired homes group a market for the industry's low-priced refrigerators as well as an outlet for previously owned and reconditioned trade-ins.

Another reason why more and more homes are being added to the electric refrigeration market each year is that young people are still getting married and starting their own homes. This alone represents a sizeable field for electric refrigerator selling activity. You can count on it, too, that young people have modern ideas and will want modern refrigeration service.

Why Young Couples Will Buy

In addition, a sizeable proportion of these young married couples come from families that have used automatic refrigerators, and they are therefore accustomed to the advantages attaching. It is reasonable to assume that they will obtain such refrigerators just as soon as they feel they can afford to do so.

Added to the marriage of young people is another factor which must not be overlooked. This is the general increase in our population which contributes new prospects to the market and which aids immeasurably in keeping it active. How can a market stagnate when new prospects are constantly being introduced to it?

For the past few years home building has been accelerated, and there always is some new residence construction. Families who build these homes frequently require a refrigerator because they have moved from rented quarters where refrigeration was supplied. In some cases, too, a family replaces its old refrigerator with a new model when it moves into a new home.

Farms & Apartments

Within the past few years we have seen another development which will create a huge number of possible electric refrigerator buyers. In fact, this is a **new** market in every sense of the word, and it is coming to life with all of the latent activity which invariably can be aroused in a previously untouched field. This market is that represented by newly electrified farms and rural communities.

Just before I left my office to attend this meeting, I heard a news broadcast in which was released a statement from Washington to the effect that in 1940 we have every probability of witnessing the largest farm income, and consequently the greatest potential spending power from rural sources, that will have prevailed during the last 10 years.

Almost every city of any size has its quota of apartment houses. These constitute another segment of the market which can be cultivated profitably and which will continue to offer sources of electric refrigeration business. Due to the competitive nature of apartment house rental, new apartment buildings are seldom equipped with anything but mechanical refrigeration.

Finally, I want to point out that thousands of out-dated automatic refrigerators need replacing each year, a condition which has obvious sales possibilities for new electric refrigerators. Here is one part of the entire market made up of prospects who have enjoyed the advantages of automatic refrigeration and who therefore can logically be expected to replace their outworn units with modern ones.

The value of this portion of the market is apparent when we see that for 1940 industry predictions indicate replacements will amount to 25% of total business of 1,800,000 units, or a total of 450,000 refrigerators! This figure is contrasted with the 1939 estimate of total sales of 1,750,000, of which replacements will total 385,000 units or 22%. If carried through, this will mean a gain of 65,000 refrigerators over 1939 in replacements alone.

450,000 Replaced In '40?

Now, you may be thinking that this estimate is too high and that it is unlikely that replacement sales will rise from an estimated total of 385,000 in 1939 to 450,000 in 1940. However, in the judgment of those who have studied the subject carefully, this increase is believed to be about right. Several basic reasons may be cited for this belief, all of which are founded on facts.

For one thing, the electric refrigeration industry has had some experience in the replacement market and knows that certain developments may be expected. Sales executives have known that as years passed, thousands of mechanical refrigerators would be replaced with new units and thus a major market would be created among present users.

It is the conviction of the industry that an excellent replacement market can be developed on the basis of model difference, even though the owner of an old refrigerator may still be receiving service from it.

They're 'Out of Style'

Compared with the modern electric refrigerator, however, the old models are out of style, and this point is vitally important with women; they are noisy in operation, a fact that frequently enabled company to "hear" that the owner had a new refrigerator; many were too small, because of the buyer's inexperience in purchasing such an item, and, consequently, failed to serve families effectively; they cost more than is necessary to operate and maintain; they are not nearly so dependable and carefree; and they lack many of the convenience features and refinements we take for granted today.

It would be interesting to note, in view of the great progress in electric refrigeration construction and features, what an owner would have experienced if he had sealed his refrigerator in a glass case the day he bought it 10 or 12 years ago, and then attempted to sell it today. Even if it had never been used, the refrigerator could be sold now for only a fraction of its original price because it offers so little in comparison with the many advancements and features obtainable in the modern refrigerator.

But, you may ask, will such a replacement market continue? Have we not reached the ultimate in refrigerator design? Decidedly not—anymore than it had been reached 10 years ago after we had been in the business for years! Refrigerators have no more reached their ultimate design than radios, automobiles, or lighting. Continuous development is one of the nerve centers of the business.

Someone, of course, will ask: "What are we going to do with all the automatic refrigerators that are traded-in? Can the dealer afford to take them?" The answer to that is: "Yes, he can, if he is alert to the opportunities, and knows how to differentiate between good and bad practice."

Utility Aid on Trade-Ins

There is also a potential opportunity in this connection for utilities to aid dealer groups, possibly by establishing centralized reconditioning stations, or otherwise supporting efforts to get trade-ins back on the power lines.

There is, however, another side to the picture which involves **you**! The manufacturers can maintain their pace of constant improvement of their products, but you men here—the men on the sales line—must keep up your end. There is a correlation between manufacturing and sales that is an essential element in the successful sales of electric refrigeration. A continuous state of cooperation must be maintained between those who produce the machine and those whose responsibility it is to find and sell the prospective buyer.

To accomplish real results, I know you realize the need for creative selling—for influencing a prospect to think **your** way is not a simple matter of order taking. The need for creative selling is especially necessary in the so-called "off season." And what is creative selling? It is nothing more or less than creating a sale much in the same way that a builder constructs a house.

It means starting from "scratch" and adding to your sales story bit-by-bit and point-by-point—getting agreement on each point from the prospect as you go. Every completed sale is actually a series of little sales, or little preliminary agreements. Overcoming objections a point at a time leads directly and surely to the big, final "yes," which is your objective when you first approach a prospect.

'Sell the Savings Story'

I have in mind, particularly, one outstanding feature of electric refrigeration which all of you probably know. This feature concerns the cost of electric refrigeration in the home. Most persons, when they think of buying a new refrigerator, hesitate to buy primarily because of cost. They may understand the need for dependable food preservation—but still balk at the investment.

Show how savings are made on foods—how quantity buying cuts the food bill—how leftovers keep fresh until served and thereby give the user the benefit of the dollars spent for them—and, too, remember the saving on ice made by every electric refrigerator buyer.

The company with which I am connected made a survey not long ago among some 58,000 owners of its refrigerators. The question, in substance, asked these owners was: "What are your savings with your refrigerator?" When the figures were compiled it was discovered that the average savings per household was $10.70 a month. That's the kind of proof I refer to when I say we must prove electric refrigerator savings . . . and thus prove that the refrigerator really costs the buyer nothing.

We speak about refrigerators having more power today than they formerly had. Do our men have more selling power than they formerly had? If experience in the production end of the industry has contributed to better product building, is it not logical to expect that experience in the selling end should constantly make for better sales technique? Or is it that we, as selling men, are not taking advantage of our past experiences?

Are we still being "stumped" by the same fundamental objections that bothered us in the past? Have we made no progress in finding the answers to obstacles of history? Are we going out to sell 1940 products with a brand of selling that was established to meet 1930 markets?

In the answers to these fundamental questions we will find the material to answer the question of market saturation. There may come into the picture a **degree** of saturation, but it will be found only in the philosophy of the individual salesman or dealership, which expects to rest on the accomplishments of the past. Saturation will never exist in the philosophy of those who look forward to the uncharted oceans of future possibilities.

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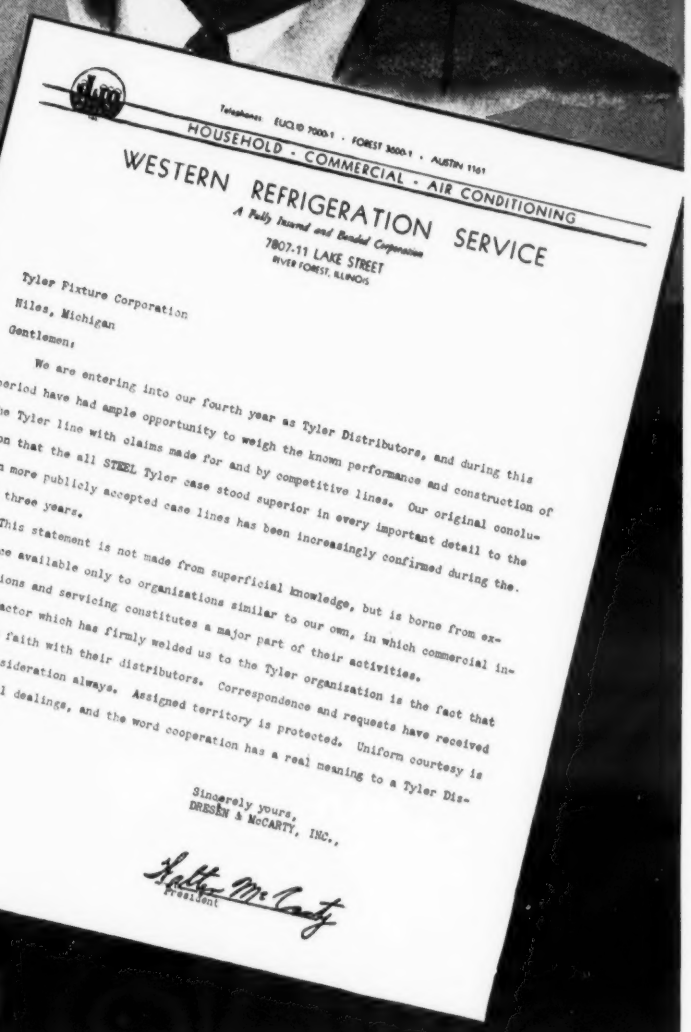

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Tyler Fixture Corporation
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Gentlemen:

We are entering into our fourth year as Tyler Distributors, and during this period have had ample opportunity to weigh the known performance and construction of the Tyler line with claims made for and by competitive lines. Our original conclusion that the all STEEL Tyler case stood superior in every important detail to the then more publicly accepted case lines has been increasingly confirmed during the past three years.

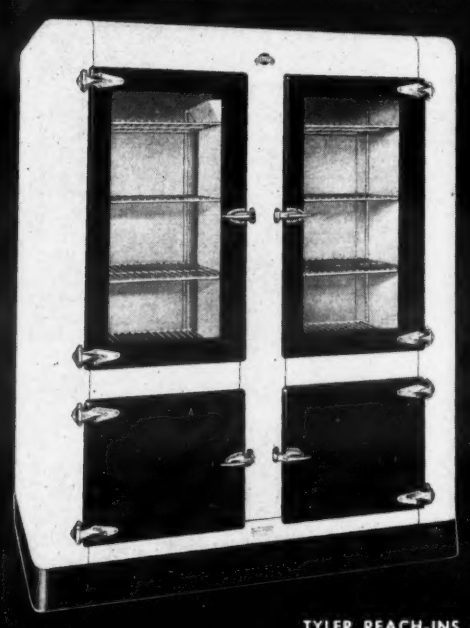
This statement is not made from superficial knowledge, but is borne from experience available only to organizations similar to our own, in which commercial installations and servicing constitutes a major part of their activities.

A factor which has firmly welded us to the Tyler organization is the fact that they keep faith with their distributors. Correspondence and requests have received prompt consideration always. Assigned territory is protected. Uniform courtesy is found in all dealings, and the word cooperation has a real meaning to a Tyler Distributor.

Sincerely yours,
DRESEN & McCARTY, INC.,

Walter McCarty
President

WPM:HMcC



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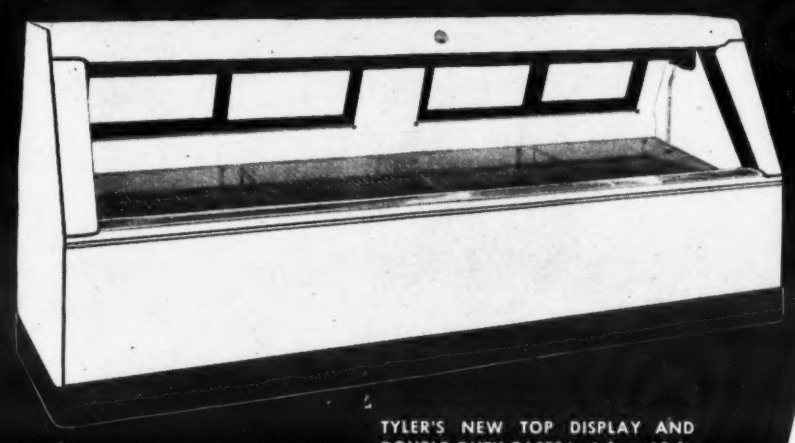

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TYLER TRIPLE REFRIGERATED VEGETABLE DISPLAY. Maximum accessibility and display. Complete produce department in one 6 ft. or 9 ft. unit.

MONTH after month, year after year — Tyler dealers and distributors are setting new records for increased sales and profits. The reason is plain. Tyler's big line makes it possible for you to completely outfit modern food stores and opens up hundreds of live prospects in other fields. Tyler values are the result of leadership — an advantage which the Tyler dealer shares. The 1940 line, Tyler's greatest achievement, is now ready. Some choice territory still open. Write us today.

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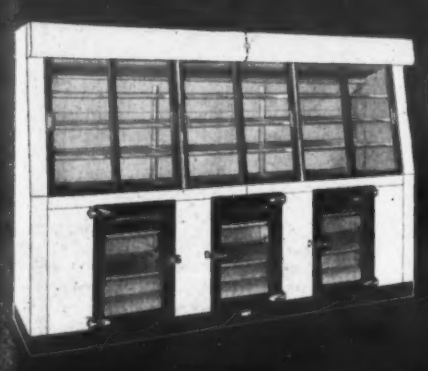
TYLER SECTIONAL STEEL WALK-IN COOLERS offer many exclusive improvements. Save money on transportation and erection costs.



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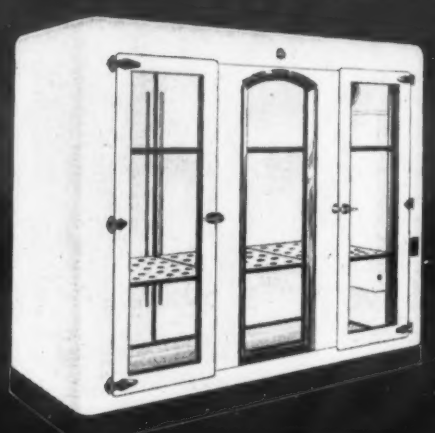

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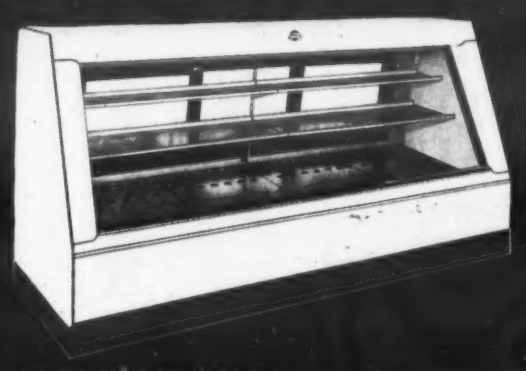

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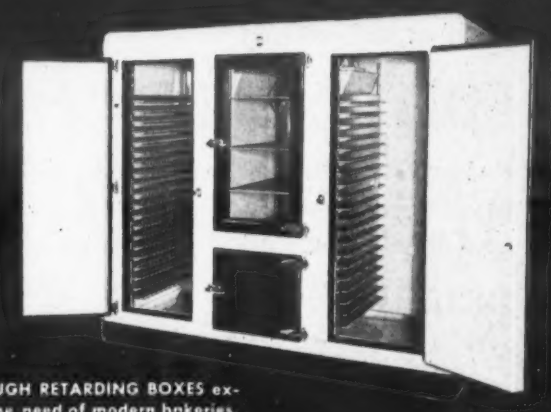

TYLER DOUGH RETARDING BOXES exactly fill the need of modern bakeries, large and small. Hold 40 to 60 standard bun trays. 40% greater capacity.

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'Local Agreement Plan' To End Free Service On Commercial Jobs Is Proposed

J. S. Kimmel Suggests Plan as an Alternative If Manufacturers Won't End Guarantees

Republic Electric Co.
Davenport, Iowa
Nov. 22, 1939

F. M. Cockrell, Publisher:

We are now in our twentieth year in the electrical refrigeration business during which time we have had a great deal of experience in the sale and installation of commercial refrigeration, dealing both directly with the customer and also through dealers.

Due to the number of persons and firms engaged in selling commercial refrigeration, with the consequent keen competition for jobs, with trade-ins still further cutting down profits, there is not available a sufficient number of jobs for each firm in the business, especially jobs yielding a sufficient volume of profit to enable the firms to be in good financial shape.

The point I am making is that this business is not one in which profits are readily made by refrigeration dealers generally. I mean annual profits reflecting a substantial increase in the financial statement of the operator. Consequently, any improvement in the trade practice that yields more profit to the dealer is greatly to be desired.

One item of needless expense that should be eliminated if possible is the practice of giving the customer a year's free service on his equipment. Many times this year becomes two years free service if the time contract is written for that period. Apparatus sold in other lines of business does not carry a year's free service or two year's free service. When any free service is given it is usually limited to 90 days. The manufacturers of refrigeration equipment are to blame for this condition as it was inaugurated by certain manufacturers who had a close control over their franchised dealers.

This practice is now such a close part of the business that it would no doubt be difficult to eliminate it. The bulk of the expense falls on the dealer who cannot afford to absorb it and should not be asked to look after a piece of machinery 365 days after it has been installed, especially after it has been subjected to the number of adjustments required with commercial refrigeration jobs.

The manufacturer could well afford to cooperate in a program to eliminate this gratuitous offering on the part of the dealer because they should be interested in the dealer himself to this extent. It is the dealer who stands the gaff.

This year's free service should never have been initiated in the beginning. Perhaps the easiest way to get it abolished would be for the dealers to have enough interest in themselves in each vicinity to make a mutual understanding that they will sell commercial jobs only on a 90-day free service basis.

J. S. KIMMEL,
President

Midwest Gets Order From Southern Rhodesia

CHICAGO—An order for display cases of 10-foot length has been received by Midwest Mfg. Co.'s export department from Salisbury, Southern Rhodesia, Africa, reports Harry J. Scheel, export sales manager. This is the company's first sizeable order for large display cases from such a distant point.

A new low-price case of 6-foot length has been added to Midwest's export line, Mr. Scheel says.

Baker To Equip Helms Bakery Addition

LOS ANGELES—Baker Ice Machine Co. has been awarded the contract for furnishing and installing additional refrigerating equipment in the second story addition to the regular plant of the Helms Olympic Bakeries, one of the largest house-to-house distributors in southern California.

Masters Forms Firm In L. A.

LOS ANGELES—Gordon W. Masters is proprietor of the newly formed Masters Electrical & Refrigeration Co. of this city.

New Tyler Cooler Has Forced-Air System

NILES, Mich.—Newest addition to the line of reach-in refrigerators produced by Tyler Fixture Corp. here is a 21-cu. ft. box which is furnished complete with a forced air coil mounted on the left wall to give proper circulation of moist cold air.

Known as model M21, this unit has walls and ceiling finished in aluminum high baked synthetic refrigerator enamel, floor finished in white vitreous porcelain enamel, and exterior finished in white and black synthetic refrigerator enamel.

York Extends Line of 'Economizer' Units

YORK, Pa.—Recent developments by the York Ice Machinery Corp. include a new line of commercial-size evaporative condensers, known in the York line as economizer units.

Capacity range of the condensers is said to cover almost the entire field of commercial applications. They are designed to produce increased capacity for the same initial cost and permit operation with more than one compressor.

Largest of these units may operate with as many as four separate refrigerating circuits working simultaneously. This flexibility is obtained by providing separate coil sections within the units which may be connected in parallel or separately.

Models E-211, E-212, and E-222 are intended for smaller applications; models EV-39-F2 and EV-39-F4 are for larger applications.

Macy's Is Delivering Frozen Foods To Door

NEW YORK CITY—Frosted foods will be delivered within a 50-mile free delivery radius by the grocery department of R. H. Macy & Co., department store here, as a feature of its new frosted foods section. Tough problems of packing and delivery of the frozen foods have been worked out, and customers in the metropolitan area served by the store will have the frozen delicacies "brought to the doorstep."

Delivery was no great problem, with the big fleet of Macy motor trucks on the firing line, but packaging of the frozen foods for such long deliveries was no cinch job. After much preliminary testing, actual deliveries were made last spring. Results of these trial runs were carefully recorded, and it was decided that a "Jiffy" bag with dry ice would insure keeping the food at a low enough temperature for any delivery in the 50-mile radius.

Frosted foods department at Macy's is the result of careful study and research by the merchandising and display departments of the store. Before selecting the personnel for this section, grocery department executives made a study of employes to select a manager who was really interested in learning about the frozen foods and their handling. The woman selected for the post was furnished with literature and spent a three week's "study period" before the department was opened.

Entire staff of the grocery department had a meeting to discuss the new frosted foods section, and the telephone order girls were given special instructions on the handling of frosted foods orders. Samples of the frosted foods were given to these persons. Before announcement to the public, the entire store staff was sent a memo announcing the new section. Spot advertising displays were put in employe's locker and recreation rooms. The plan has brought many employe-customers for the frosted foods.

To make the new section attractive, the store's display department worked out a setup that places the frosted foods section on one of the main traffic aisles in the grocery department. Three display cases and one refrigerated cabinet handle the foods. A Grand Rapids Cabinet Co. refrigerated case is used, and the brand of frosted foods is "Coldseal," packaged by Frosted Foods Sales Corp.

Frosted foods will be sold on the regular Macy policy of "6% saving for cash." Some 42 food items are now being stocked.

Army Commissary Vegetable Storage Has Both Blower & Under-the-Shelf Coils

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FT. SILL, Okla.—Two methods of cooling are used in the vegetables and storage room of the general commissary at Ft. Sill, an army post which is a coordinating unit between artillery, anti-aircraft, and aircraft units of the U. S. armed forces.

The storage room is cooled by a 2-speed blower unit. At night the blower is operated at low speed to drop the temperature to 60° F., while in the daytime it is operated at high speed in order to maintain at 75° F. temperature in the room.

The vegetables themselves are cooled by the coils arranged under the shelves (as shown in the picture). On each side the two top coils are 12 foot by 10 inch double row flash-type coils, while the two bottom coils are 10 foot by 10 inch single row fin coils with no drip pan. The top rear coil is a 6 foot by 10 inch flash coil single row, while the bottom back coil is a 6 foot by 10 inch single row fin coil with no drip pan.

All of this low-side equipment is hooked in multiple to a Mills model MH4WM 3 hp., 4 cylinder, water-cooled methyl chloride condensing unit, which operates approximately 10 hours in 24.

The temperature is controlled by means of a thermostat and solenoid valve on the blower coil.

The room is partitioned off from the general store with a glass end and a door leading from the store, this unusual arrangement providing a full view to the interior.

This installation was engineered and installed by Jack Trompeter of Jack's Norge Sales, Mills distributor in Lawton, Okla.

Proud User 'Ballyhoos' His New Beverage Cooler and Added Sales Are a Result

BOULDER, Colo.—Acting on the theory that fullest benefit cannot be derived from the installation of improved facilities unless the presence and value of such facilities are forcefully called to the attention of the consuming public, the Hi-Way Liquor Store near here made its new 100-case dry-storage bottled beverage cooler the basis of an intensive advertising and promotional campaign.

First a couple of arrow-shaped signs were placed inside the store, calling attention to the newly installed refrigerator and pointing out how the service which it provided could be used to best advantage by customers.

One of the arrows pointed to a large section of display shelving which had been installed on one side of the store, near the front. On these shelves were samples of all the different brands carried in stock.

The sign pointing to these shelves read: "Here, choose your brand, beer, ale, stout, mixes, or soft drinks." Another arrow sign pointing to the refrigerator itself carried the inscription: "Here, over 100 cases, beer, wine, whiskey, etc. Cold, dry, clean, sanitary."

In addition to attracting attention to the refrigerator, these signs helped speed up service and prevent traffic congestion in front of the cooler by routing customers first over to the display shelves to pick their favorite brands.

When customers reached the cooler itself they knew immediately what they wanted, and could order without delay.

This point-of-sale promotion was followed up by a comprehensive newspaper advertising campaign. One large advertisement featured a picture of the refrigerator and listed the various advantages of this unit in headline form.

Two principal points stressed in the advertising were that the new refrigerator kept the bottles not only at the correct temperature but also dry, and that the large capacity of the cooler enabled the customer to buy properly chilled unbroken cases in which bottles had not been touched by human hands after sterilization at the brewery.

Despite the fact that Boulder is a dry and temperate town, the refrigeration installation rated a three-paragraph news story in the local paper.

Mass. Electricians Move To Curb 'Wholesale Buying'

SPRINGFIELD, Mass.—In an effort to short-circuit the sale of electrical merchandise by distributors to persons not engaged in the electrical contracting business, state and local officials of the Master Electricians Association conferred here recently with representatives of major distributorships.

Two recommendations were drawn up, the first, directed at distributors, recommended that no merchandise, fixtures, or appliances be sold at retail except to electrical contractors or to firms maintaining an electrical department with a full-time electrician in charge; the second, aimed at manufacturers, called for an investigation of all wholesalers, and recommended that those found to be doing a strictly wholesale business be entitled to wholesalers' discounts.

As a result of the conference, distributors will appoint a committee to meet with a contractors' group to consider the problem, and to draw up a code of ethics for the electrical business in this area. A state-wide effort is now being made to ban over-the-counter sales by wholesalers to persons outside the electrical contracting field. Under the proposed new arrangement, homeowners and other laymen will have to pay retail prices for all such equipment.

Present at the meeting were representatives of Westinghouse, General Electric, Carlisle Hardware, Graybar, and other companies in the field.

Colorful Exterior & Modern Interior Feature New Store

LOWELL, Mass.—King's, Inc. has been opened here as an electrical appliance dealership by Harold B. Rosenberg and Henry Weil. The store will carry a complete line of refrigerators, washers, vacuum cleaners, and other appliances.

Store exterior features a black and yellow color combination, and a large neon sign carries the name of the store. Interior fixtures are of light wood, store fixtures following the modern trend.

Service department is under the direction of William L. Olson. Mr. Weil will have charge of sales, and Mr. Rosenberg will manage the business end of the store.

Homer Ellis, Veteran Philco Distributor, Dies

NEVADA, Mo.—Homer A. Ellis, president of Ellis Music Stores, and head of Mo-Kan Distributors, Philco distributor here, died recently.

Mr. Ellis first became associated with the radio and music industry in 1911 with the Lines Music Co. at Springfield, Mo. For four years he was manager of the Fort Scott and Nevada branch stores of the Martin Piano Co., purchasing these two stores to establish the Ellis Music Co. He later established a third branch at Butler, Mo.

General Refrigeration Co. Appoints 3 New Distributors

BELOIT, Wis.—Three new distributors of Lipman commercial refrigeration and air-conditioning equipment have recently been appointed by General Refrigeration Corp.

The new distributors are: The Hutchinson Co., Rochester, N. Y.; Guy Day, Ottumwa, Iowa; and Montgomery & Crawford, Inc., Spartanburg, S. C.

'Jake' and 'Bill' Get Going

MARSHFIELD, Wis.—Jake Eckes has obtained a half interest in the North Side Radio Service shop operated here by Irvin Schmidt. The firm services appliances.

* * *

LOS ANGELES—Bill's Refrigeration Service is the name of a newly formed organization, headed by William D. Boyle.

$30,000 In One Day For Indiana Dealers

SOUTH BEND, Ind.—A one-day appliance sale sponsored by the South Bend Electric League on Nov. 10 produced total sales of $22,300 by 23 participating dealers, besides an estimated $5,000 in sales by department stores not reporting.

Total of 402 appliances were sold during the day, according to O. P. B. Johnson of the league, including 53 ranges, 25 refrigerators, 96 radios, 44 sweepers, 30 washers, and five water heaters.

Electrical dealers of Elkhart, Ind. conducted a sale on the same day, realizing $7,500 in sales from 221 appliances among the 17 participating dealers.

South Bend dealers pooled their resources with distributors and Indiana & Michigan Electric Co. in buying newspaper space to advertise the merchandising event for three days preceding the sale.

Ralph Gainey Supervises Philco Sales At Burson's

JACKSON, Miss.—Burson's, new Frigidaire dealer here, handling Philco radios and Tappan gas ranges, has appointed Ralph Lee Gainey as sales supervisor for Philco products. He will also be general salesman on other products.

Blaisdell To Manage G-E In Eastern Zone

SCHENECTADY, N. Y.—L. T. Blaisdell, since 1936 commercial vice president of General Electric Co. with headquarters in Dallas, Tex., has been named manager of the company's east central district.

W. B. Clayton will acceed to Mr. Blaisdell's former post as manager of the southwestern district.

Mr. Blaisdell had been district manager in Dallas since 1924. Entering G-E employ in 1904 as a member of the Test course, he was later transferred to the construction department as supervisor of power plant installation.

In 1911 he was transferred to the Baltimore office as commercial engineer, and in 1917 he was made manager of the company's Washington office, a position which he held until he was transferred to Dallas.

Mr. Clayton entered G-E's Test course in 1905, and three years later was transferred to the motor engineering department. In 1910 he was shifted to the commercial department and subsequently was sent to Dallas, where he was associated with Southwestern General Electric Co.

Later he was made transformer specialist of that territory. In 1924, when the southwestern district was formed, Mr. Clayton was made manager of the central station department and assistant district manager, which position he held until his recent promotion.

Stratton-Warren Outlet For Hotpoint In Memphis

MEMPHIS, Tenn. — Stratton-Warren Hardware Co., 40-year-old wholesale house here, has been appointed distributor in the Memphis trading area for the entire Hotpoint home appliance line.

Leslie M. Stratton, Jr., executive vice president of the firm, will personally supervise the firm's Hotpoint activities. Mr. Stratton is a past president of the National Wholesale Hardware Association, and the Southern Hardware Trade Association, and is at present a member of their executive committees.

Dierkes Joins Staff Of Krich-Radisco

NEWARK, N. J.—John F. Dierkes, formerly sales representative for Kelvinator, has joined the sales department of Krich-Radisco, Inc., New Jersey distributor for Kelvinator. He will be territorial manager in New Jersey for Hudson and Bergen counties.

Gibson Organizes Service Co.

LOS ANGELES—Ollis R. Gibson has organized Gibson Refrigeration Service here to do refrigeration contracting and service work.

Carolina Power Dealers Net 70% of Total Sales

RALEIGH, N. C. — Better than 70% of all major appliance sales for the first nine months of the year in the territory of Carolina Power & Light Co. were made by dealers, figures published by the utility show.

Only in the field of electric ranges and water heaters, in fact, did the power company account for more than 2% of the sales for the period.

Refrigerator sales for the first three-quarters of the year totaled 9,926 units, while radios came in first in the sales parade with 15,095 units, and washers and ranges almost tied for third place, with 3,124 and 3,050 units respectively.

Total sales in the territory and the percentage of sales by dealers are shown for each major appliance in the tabulation that follows:

Item	Total	Dealer %
Electric Ranges	3,050	85
Water Heaters	1,197	72
Refrigerators	9,926	98
Heating Plants	463	100
Radios	15,095	100
Vacuum Cleaners	876	99
Washers	3,124	99

New Cooling Firm In L. A.

LOS ANGELES — Process Air Conditioning Co. has been organized here to sell air-conditioning equipment. Lawrence M. Reynolds is proprietor.

Locker Storages

Effect of On-the-Farm Freezing Facilities On Locker Plants Studied At U. of I.

URBANA, Ill.—That refrigerated locker storage plants are making themselves felt in rural Illinois as both a social and economic force was evidenced by the tenor of the information presented at the two-day annual locker conference held recently at the University of Illinois' College of Agriculture.

Such plants have definitely placed butchering, processing, and similar homely tasks connected with the farm family's food supply on a "big business" basis, it was indicated, and much progress is continually being made along this line.

Warning was issued to locker operators, however, that they must guard against the encroachment of new developments which may in time replace all or part of the functions of the commercial locker plant as it is now constituted.

Most threatening of such developments at the present time seems to be the increasing use of the commercially built domestic freezer-refrigerator having a small quick-freezing compartment and sufficient refrigerated storage space to satisfy the needs of the average farm family, and the home-built walk-in type of refrigerator also having a quick-freezing compartment.

Approximately 200 owners, operators, and officials of Illinois locker plants attended the state-wide conference to learn of the latest advances in their industry. Prof. Sleeter Bull, associate chief in meats, at the state's college of agriculture, was in charge of the meeting.

Appraising the far-reaching effects of the cold storage locker industry on farm family living, Dean H. P. Rusk, head of the college, pointed out that prior to 1937 there were not more than one or two such lockers in the state, whereas the total is now 110 and the number is still growing.

While the locker system has made a remarkable growth, families (especially city patrons) living in communities served by such plants are not fully aware of the advantages and possibilities of the use of a locker, J. N. Weiss, of the department of agricultural education, reported to the conference.

His conclusions were based on a study which he made in two communities served by locker plants for an average of almost two years. A total of 283 families were interviewed, one-third of them being patrons and two-thirds non-patrons.

Advantages of the service outnumbered the disadvantages, in the opinion of the majority of families interviewed.

Chief objection of non-patrons, Mr. Weiss reported, was that the service costs too much. Almost 53% of the patrons held this same opinion.

"More than a third of all the patrons had noted some deterioration in the quality of locker stored meat," he continued.

"Considerable interest exists in the possibilities of a refrigerated cabinet for the home, ample enough to meet the family needs. This is especially true in the case of large farm families living at a distance from the locker plant."

Outlining business factors which affect cold storage locker plants, E. N. Searls, of the department of agricultural economics, pointed out that operators must be alert to the needs of families in: (1) planning the locker service; (2) education and adjustments of complaints of patrons; (3) creating a desire for the service among those who are not patrons: and (4) in handling their service so as to avoid the consequences of any new developments which might replace their business or parts of it.

Regardless of depressions or booms, farm families which raise their own food supply and preserve it by cold storage locker and other modern devices will continue to eat, K. F. Warner, of the U. S. Department of Agriculture, Washington, D. C., told those attending the conference.

It is for this reason that locker plants and freezing systems are destined to play an increasingly important part in the preservation of foods, especially for rural families, he pointed out.

Warner, who spoke on the future of the locker business, pointed out that lockers and freezing can cushion the average $500 food bill of the farm family against the shock of ups and downs in food supplies and prices.

WHAT LIES AHEAD

So far as the locker manager, himself, is concerned, the future of the business is in his own hands, Mr. Warner said. Whether or not the manager makes the most of that opportunity will depend upon his ability to adapt his services and equipment to the needs and demands of his patrons, the speaker added.

With more than 50% of Illinois farms expected to have electric service available to them by the end of the next year, commercially built domestic freezer-refrigerators are fast coming into the field as a new development in farm refrigeration, R. R. Parks, of the college's department of agricultural engineering, reported to the conference.

Whether or not these and similar developments will be a boon or a barrier to central cold storage locker plants remains to be seen, he said. Already there are at least three commercially built domestic freezer-refrigerators on the market, Mr. Parks reported.

Another development which is coming to the front with the advent of rural electrification is a large, home-built walk-in type of refrigerator storage room containing a freezer or "zero"room, Mr. Parks reported.

Such a unit, if it can be economically built and operated on the farm would provide the storage service which the farm family now gets from the central cold storage locker plant, he pointed out.

TWO ASSOCIATIONS

Growing importance of the cold storage locker plan was reflected in the fact that the industry now has two organizations, both of which held meetings during the conference. These are the Illinois Food Locker Association and the Illinois Cooperative Locker Association.

Members of the first of these organizations elected Dean H. P. Rusk, of the College of Agriculture, and Prof. Bull as honorary members. Officers elected by the group were: president, Floyd M. Simmons, Springfield; vice president, George Schlageter, Streator, and secretary-treasurer, Gilbert J. Truckenbrod, Mendota.

Dana Cryder, Minooka, is president of the Illinois Cooperative Locker Association which also held a meeting during the conference. Earl Wenzell, representing the DeKalb country locker unit, is vice president, and R. V. McKee, Marshall-Putnam, secretary.

George E. Metzger, of the Illinois Agricultural Association, was a speaker before the special session of the cooperative locker association.

R. O. Roth, of the National Livestock and Meat Board, Chicago, was the speaker for the annual banquet.

Practical Advice on Plant Operation To Keynote National Locker Meeting

(Concluded from Page 1, Column 5)

Co., Cambridge, Mass. will open the educational sessions with a lecture and demonstration on "Cry-O-Vac," a latex substance manufactured by his firm for use in encasing foods which are to be quick frozen.

A motion picture film illustrating the contrast between locker plants built three or four years ago and those being erected today will then be shown.

To polish off the day's program, Miss Eva I. Buel, extension nutritionist from Purdue University, will discuss "Preparation of Frozen Food"; Sleeter Bull, professor of meats at the University of Illinois, will tell "How to Improve the Locker Business"; and Armstrong Cork Co. will present another movie film.

Second day will be opened by the report of the committee on organization of the national association, and action by the conference on this report. Committees will then be appointed by the permanent chairman of the conference in accordance with this report.

Dr. H. H. Plagge, research professor in pomology at Iowa State College, will then deliver an address entitled "Plant Foods in the Locker Plant," during which he will present a series of slides showing the simple equipment required for preparation of fruits and vegetables for quick freezing.

"Packaging of Frozen Foods" will be discussed by L. V. Keefe of New York City, and E. E. Elder of Aurora, Ill. will explain "Locker Plant Bookkeeping." "Freezing and Storage of Poultry" is the topic to be discussed by Dr. George F. Stewart, research professor in poultry products, Iowa State College.

John E. O'Brien, associate editor of The Progressive Grocer, will open the afternoon session with a dissertation on the "Economic Effects of Locker Service." This will be followed by a paper on "Wrapping Papers in the Locker Plant" which will be delivered by Prof. Fred J. Beard, meat specialist, Iowa State College. A comprehensive summary of this paper will be found on the following page of this issue under Prof. Beard's name.

A lecture on "Meat Curing," with an accompanying demonstration, will be presented by Curtis A. Keen of Chicago. A customer's-eye view of locker plants will be offered by J. S. Russell, farm editor of the Des Moines Register, under the title "A Patron's Observations."

Then comes the frozen foods merchandising forum conducted by E. V. Bertolini and E. W. Rosenheim of Chicago, and Charles Q. Sherman of New York City. Various ways in which locker plant operators can cash in on frozen food profits will be suggested during this discussion.

Evening of the convention's second day will be devoted to the conference banquet, which will be featured by a variety of entertainment and a speech by Arthur H. Brayton on "Telling the World About the Locker Business."

Concluding the day's program will be a round table discussion of questions and problems submitted during the first two days of the meeting. A panel of experts composed of K. F. Warner, H. H. Plagge, S. T. Warrington, G. F. Stewart, J. S. Russell, F. J. Beard, J. E. O'Brien, and S. Bull will attempt to answer the questions and solve the problems of operators attending the conference.

Starting of the third and final day will be a business meeting featuring adoption of an organization plan for the National Refrigerated Locker Association and a report of the committee in charge of nominating officers. Election of officers will then take place.

First address of the day will be that of K. F. Warner, senior extension meat specialist of the U. S. Department of Agriculture, Washington, D. C., on "Shooting Trouble in Locker Plants."

"Operating for Profit" will be discussed by S. T. Warrington, formerly connected with the University of Minnesota and now associate agricultural economist of the Farm Credit Administration, Washington, D. C.

A business session of the national association's new officers and committees, a luncheon meeting, and reports by these officers and committees will wind up the conference activities at midday, Dec. 9.

Cheese Plants & Locker Storages Mix In Wis.

MADISON, Wis.—Of 177 Wisconsin locker plants contacted in a recent survey, only 67 reported that their locker business was being operated independently of any other enterprise. Almost as many plants—57, to be exact—are being maintained in conjunction with cheese factories, thus becoming an adjunct of one of the state's greatest industries.

Other types of businesses which have taken on operation of locker plants are: creameries and dairies, 11; meat markets, 16; general merchandise, 8; ice and cold storage, 7; ice cream manufacture, 4; taverns, 3; gas station, 1; farm machinery, 1; fuel business, 1; mink farm, 1.

Louisiana's First Locker Plant Is G-E Equipped

ALEXANDRIA, La.—First locker plant in the state of Louisiana is rapidly nearing completion here and probably will be open for business about Nov. 15, reports T. F. Campbell, commercial refrigeration sales manager of General Electric Supply Corp. at New Orleans.

Completely G-E equipped under the supervision of G-E engineers, the plant will be operated by Ben F. Rush.

Mississippi's first locker plant, also G-E equipped, was opened recently at Raymond, Miss., it is reported.

400 More For Oklahoma

WILLIAMINA, Okla. — Construction of a 400-locker cold storage plant has been started here by Charles S. Gilson.

Cold Storage Locker Idea Spreads Rapidly In Ala.; Goal Set At 67 Plants

MONTGOMERY, Ala.—At long last the idea of refrigerated locker plants is beginning to catch hold in the state of Alabama. Only a year ago there was not one such plant in the state, but now locker storages have been established in Tuskegee, Trussville, Holt, Ruscaloosa, Demopolis, Dadeville, Camp Hill, Enterprise, Camden, Greenville, Albertville, Cullman, Clanton, Anniston, and Luverne.

Conservative southern farmers were slow to take to this idea which had spread so rapidly in other sections of the country, but now quick freezing and cold storage are among the chief topics of conversation at rural meetings, and it appears that Alabama's Department of Agriculture might possibly reach its announced goal of one locker plant for each of the state's 67 counties within the next two years.

Proper Wrapping Called Important Factor In Preservation of Locker-Stored Meats

By Fred J. Beard
Assistant Professor in Charge of Meats, Iowa State College

Second only to organization and formulation of policies in the list of problems confronting the operator of a refrigerated locker storage plant is maintaining of quality in the products stored in the plant.

Experience has shown that, in the case of meats, quality depreciates rapidly unless the entire content of the meat is held intact. The most practical way of accomplishing this seems to be to encase the meat substances in some sort of wrapping.

Most operators have resorted to the use of paper for protecting meat against loss in weight and quality. Such a paper, to be effective, must prevent dehydration of the product, formation of rancidity, and development of foreign odors.

Furthermore, the paper should be resistant to tear or puncture when wet or at low temperatures, and should possess at least one surface upon which can be legibly stamped the identification of the contents of any package. It must be easily applicable as a wrapper, must be vapor-proof, and must be of light weight so as to form a seal at the folds when reasonable care is exercised in wrapping. Some insist it be economical in price.

HIGH INTEREST

Interest of both locker operators and paper manufacturers in obtaining a suitable wrapping material for frozen meats was indicated by the fact that more than a score of samples were sent by both groups to the Iowa State College meat laboratory when it became known that this laboratory was interested in testing wrapping materials.

The first test was to determine the moisture-proofness of various papers used in wrapping meat. This was done by measuring the amount of water that passed through the various papers in a given time. Water was placed in glass jars, then samples of each paper to be tested were fastened over the tops of the jars and made water tight with melted paraffin.

Weights of all jars were recorded. Then a jar covered with a sample of every paper was placed on a shelf, while jars with duplicate paper covers were inverted in a special form of a rack so that the water was in contact with the paper at all times, though no outside obstacle came in touch with the paper.

In order to determine the effect of creasing or folding waxed paper, four folds were made on each sheet before being fastened over the tops of the jars.

Each jar was weighed every seventh day for six weeks.

26 SAMPLES TESTED

A total of 26 different samples including five parchment and 10 wax coated papers were tested and none proved to be absolutely moisture-proof.

As was expected, the inverted jars lost water much faster than those held in upright position. In some cases the paper on the inverted jars deteriorated to such extent as to release the water. All of the inverted jars with parchment covers were dry within six weeks, some as early as the fourth week.

The waxed papers were much less pervious to moisture although considerable deterioration had occurred due largely to the growth of molds.

In the upright group the parchment covered jars lost six to 10 times as much water as did those covered with waxed paper. The lightest weight parchment lost most rapidly while the loss through the waxed papers was negligible—about one gram per week as compared to 10 or 12 grams through the parchments.

Creasing waxed paper did not cause it to become more permeable to water. Our tests indicated that the paper was little damaged by creasing, as far as preventing the escape of water was concerned

The tests tended to show that moisture will escape through parchment paper much more rapidly if the paper is in direct contact with the water. Waxed paper likewise will lose water faster if in contact with a moist surface, but to a much less extent than parchment.

General results of the tests indicated that wet surfaces of paper will permit much more water to escape than will dry paper. Furthermore, it was indicated that probably two thicknesses of paper around a package of meat would afford much more protection against the loss of moisture than one layer.

Accordingly, a second paper test was started in which ground lean beef was the medium to determine the retainability of moisture by paper. The meat was weighed into 1 lb. packages, similarly molded as to shape, and wrapped in single sheets of paper cut so as to extend 1¼ times around the meat. The paper was carefully folded at the ends and a string tightly drawn around the package.

The packages were frozen and stored at a temperature of 0° F., and the samples weighed once every week for 16 weeks to record any weight losses.

Of the 15 different types, weights, and grades of paper tested, only three could be classed as vapor-proof with one thickness as a covering over the meat. One was a latex treated paper and the other two were cellophane sheets.

Six other wrappers allowed a shrinkage which ranged from 1.86% to 2.86%. The greatest shrinkage was 4.51% with a 40 lb. white paper having a special kind of filler. Second and fourth largest shrinkages were through 30 lb. and 40 lb. parchment paper.

WAXED PAPERS RATED

All of the waxed papers ranked between the parchments and the latex and cellophanes.

It should be emphasized that the amount of shrinkage has no significance in this test. It serves only as a basis for comparing moisture losses from surfaces of meat through paper wrappers.

Another wrapper which we have had under test for about two years is the "Cry-O-Vac" rubber bag. When inflated it is almost as transparent as cellophane. It may be made to contact around the product so as to exclude the air and prevent the formation of frost inside the package.

Beef loin steaks were frozen and stored for 20 months at 10 to 15° F. When the bag was removed, the steaks looked as fresh as some that had been frozen only a few days. When cooked, the meat was unusually juicy and there was not the slightest indication of rancidity.

NO WEIGHT LOST

A point of marked interest is the fact that the steaks weighed exactly the same as when put into the freezer 20 months before.

Development of air-tight packages is another problem which should be considered. When oxygen enters into a chemical union with molecules of fat, rancidity develops. Hence, exclusion of air from meat packages would tend to eliminate the development of rancidity and the dehydration of the product.

Use of such an air-tight package would make it possible to adopt systems of freezing—such as spray blasts or submersion—which are not practical with present packaging methods.

Locker Storages

General Store Boosts Income By Installing Locker Storage Plant

SUMNER, Neb.—Revenue from a 50-locker refrigerated storage plant located in his establishment comfortably augments the income which D. R. Dickerson derives from the general store which he operates in this little town of 300-odd people.

The lockers, cooled by Baker refrigerating equipment, rent for $10 and $12 per year, according to size. There is room in the plant for 34 additional lockers, and Mr. Dickerson expects to install these extra units this year in response to the demand for this rental service.

Mr. Dickerson, who does a store business of approximately $500 a day despite the size of the town in which he operates, believes that merchants in other cross-roads communities might find such a refrigerated locker service a welcome means of combatting the competition of the larger "bright light" towns.

He has found that the locker plant not only increases his revenue directly but also boosts his store volume materially by encouraging farm women and other housewives to buy fruits and vegetables in large quantities for locker storage.

IT'S AN ILL WIND.....

Series of 'Misfortunes' Brings Good Luck & Big Business To Saginaw Locker Plant

SAGINAW, Mich. — Natural demand, plus a series of unforeseen events which resulted in a great deal of unexpected publicity, has filled the Court Street locker storage plant of the Symons Refrigerated Locker System to capacity. Opened about one year ago by J. W. and C. T. Symons, who also operate a 500-locker plant at Caro, Mich., the new enterprise was started with 300 lockers.

About six weeks ago the demand for lockers had increased to the point where 100 more units were installed and a waiting list of approximately 50 people at present indicates that the plant must be expanded again soon.

According to C. T. Symons, many of the new locker renters are deer hunters, but the reason these hunters know about the plant's existence is the result of widespread publicity.

The first "misfortune" which brought good fortune in the form of business resulting from publicity, was a hold-up. Not long ago the plant was entered by a man who forced one of the employes into a cooler, locked the door, and made off with a quarter of beef. After some hours the employe was released and later the thief was apprehended. Saginaw papers carried the story.

A few weeks ago the locker plant caught fire when struck by lightning. As the fire was centered directly under the 7½-hp. York 4 x 4 ammonia refrigerating machine, the lead gaskets soon gave way in the heat, releasing the ammonia and causing difficulties for the firemen. As all firemen were equipped with gas masks, the fire was eventually brought under control and the plant has since been rebuilt. Once again the newspapers gave a vivid description of the event.

In recent weeks many of the customers of the plant have been returning deer hunters. C. T. Symons estimates that out of the 100 new lockers just installed, over 60 were owners of bucks shot in northern Michigan. One day a man came in to admire the 40-odd bucks hanging in the pre-cooling room and stated that he would like to have a certain very fine specimen which had larger horns than any of the others.

The stranger related that he had just returned from deer hunting, and was disappointed over not getting his buck. He went away mourning his ineptitude as a Nimrod, and the employes thought no more about the matter.

Late that night a patrolman saw someone break the front window out of the locker plant door and start to crawl through. Apprehended, the culprit turned out to be the unsuccessful hunter, who apparently craved the satisfaction of having a buck—dead or alive.

For the third time in just a few weeks the Saginaw plant of the Symons Locker System made the front page of local papers. Returning deer hunters have begun to come in more rapidly, and it may be necessary to increase the plant more than the 100 lockers which are contemplated.

Refrigeration equipment in the Symons plants was installed by Westerlin & Campbell of Detroit. Lockers were furnished by the Lyons Metal Products Co. of Aurora, Ill.

AIR CONDITIONING & REFRIGERATION NEWS

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NOVEMBER 29, 1939

Pioneers Foresee Great Future

PIONEERS are often thought of as "sot in their ways," and addicted to talking affectionately of the "good old days," and deploring the tendencies of modern times. Those who attended the "Old Timers Reunion" at the NEWS offices in Detroit Nov. 20, however, came away with a totally different impression.

Man after man, famous in the annals of household refrigeration for having invented this or developed that—two or three decades ago—rose to his feet to reminisce about the difficulties and hardships of that time, and to predict that refrigeration will go forward to new heights of development which may make present systems seem as clumsy and inefficient as were those of Model T days.

Present-Day Designers Have Advanced Materials

"Young men should see what wonderful opportunities they have in this field," these pioneers would say. "We had so little to work with that it is no wonder that what we turned out wasn't much good. But nowadays you have everything in the line of highly perfected parts and materials. You also have a science—mathematical equations and formulae, charts and tables—whereas we worked out everything by rule-of-thumb methods.

"Progress to date has been excellent, and surely deserving of praise. But it is as nothing compared with the progress that should come. With the materials you have to work with nowadays, with so much previous experience to rely upon, you should be able to work wonders in the way of design."

'It Can't Be Done,' They Said—But Here It Is!

Most amusing in the light of present products were the predictions made in the early days that this or that "couldn't be done." There was the New York financier, for example, who turned thumbs down on a plan for manufacturing household refrigerators because "you'd have to hire an operator to go along with every machine." in those days, he wasn't so far wrong, at that.

Men Who Didn't Know What Was 'Impossible'

Development after development, that today may be taken for granted, has been ruled out by the experts as "impossible" or "impracticable." An air-cooled compressor, a non-toxic refrigerant, a tight seal, non-porous castings, silent valves, low head pressures—these are but a few of the things which, not so long ago, were declared out-of-the-question and not worth experimenting upon.

It's interesting to note that most of the pioneers who did so much to advance the art and science of small-machine refrigeration were men who were not high-ranking refrigeration engineers at the time of their most important activity in the field.

Early Engineers Came From Other Fields

Many of them came from the automotive field. Others were electrical engineers. The man who developed the G-E "Monitor Top" (first of the hermetically sealed units) came from their turbine department. Frigidaire's first chief engineer had no refrigeration experience—he had been manufacturing farm lighting plants. Norge engineers had been making automobile transmissions. And so it went.

These pioneers were men of vast ingenuity and even more patience and persistence. They didn't know that it couldn't be done; they didn't know too much about what had been done before; they merely saw a problem to be worked out, and labored on it until they arrived at some sort of a solution—crude as it may have been.

Real Opportunities Just Opening Up

To recent graduates of training courses in refrigeration; to recent products of our collegiate engineering courses; to men now working in refrigeration manufacturing and servicing shops; to all men who are employed in the refrigeration industry—these pioneers say:

"Men! We have just begun our work. Refrigeration is in its infancy. The progress we have made in the last quarter century is but the first rough draft of what will eventually be a beautiful and efficient product. We have blazed a trail for you, a trail that you should pave into a smooth highway. You have a great opportunity. Make the most of it!"

They'll Do It Every Time . . . By Jimmie Hatlo

LETTERS

Sell Air Conditioning (1) In Phases, and (2) In Packages

Standard Air Conditioning, Inc.
125 Federal St.
Boston, Mass.

The 8 Phases of Air Conditioning—And When You Need Them
For Year Round Uses
1. Ventilation. 2. Air Cleaning. 3. Air Circulation. 4. Noise Elimination.
Cold Winter Days Only
5. Heating. 6. Humidification.
Hot Summer Days Only
7. Cooling. 8. Dehumidification.

Editor:

Your editorial in the Nov. 1 issue "Air Conditioning Begins to Untangle" strikes a responsive cord with a great many of us. More power to you! Don't be so tough, however, on the cast-iron crowd because they aren't as bad as they might be. And up in New England we do think "winter air conditioning" is important and very much so. With what I know about Detroit weather it is important there, too. And I would like to make a little bet with you, George, that if you are living (maybe you are) in a humidified house or apartment for two months during any winter, you will get the humidity bug so thoroughly you will have humidity every winter from then on even though to get it you may have to hang tin cans on the chandeliers.

It seems your editorial, and it is quite natural, assumes air conditioning must be cooling. This is perfectly understandable because you as well as the writer and a number of others have more or less grown up in the refrigeration business. But air conditioning is more than cooling, or it may be less than cooling. There have been various and sundry definitions of air conditioning, so many that it would seem totally impossible to get one to cover all applications and all conditions. But I am going to give you a suggestion that the industry start talking of air conditioning as we do and have been doing for the past five years. Talk of air conditioning in phases. Then when a customer buys a five or six, or seven, or eight phase job, these phases are definitely apparent to him as well as to the salesman. And he knows exactly what he is getting, and what the salesman is talking about.

You will find the eight phases listed at the top of our letterhead. And that is the way we believe in talking about air conditioning. On this basis no customer could possibly misunderstand and expect a summer cooling job if he has bought heating and humidification together with ventilation and air cleaning and proper circulation. It is true that this means a little more difficult selling than the kind that promises and delivers little. But in selling a job on this basis, it is definitely pinned down to definite phases. And the customer knows what he is getting and pays for what he gets.

One other thing I would like to add, speaking of air conditioning as an industry, it will be an industry when "rugged pioneers" are allowed to go ahead, and when *package conditioning* assumes the position it should have. Many of the complicated duct jobs of yesterday and today could and are being done so much better with self-contained or *package* units.

The industry has got to re-learn a lot of its selling, and it will emerge from the contracting business slowly. But the great volume and the real volume on which it is basing an industry must be in the package business. I do not mean that packages will replace the large central system for large stores, theaters, auditoriums, etc. But the really large market is waiting for those manufacturers who will sensibly design and equally sensibly sell the package unit whether it be for ventilation and air cleaning alone or the complete eight phase air-conditioning job.

I believe until that times comes the industry will limp along like we did in the electric refrigeration business until we got self-contained units. Or like the automobile industry did and would limp along today if every car was a special body job.

Maybe you remember the howls that went up from some of us in the electric refrigeration industry when it was first suggested that multiple installations in apartments be changed to individual installations—that is a complete self-contained refrigerator in each apartment instead of 12 or 15 on one compressor. Do you remember how we said the added service would be terrible, that the servicing of 15 separate compressor and motor units instead of one would be unsound. And you probably know how wrong we were. Today it probably would be impossible to buy a multiple installation for an apartment. We believe as thoroughly that the future of air-conditioning business as an industry is along the same line—packages properly placed and more or less as the space requires. This has all the advantages of flexibility of operation, semi-portability, and with the better units probably shows less service than the one big unit with ducts crawling all over the place.

This all contains two definite recommendations. First, sell air conditioning in phases. And second, sell it in packages wherever possible. And in doing this we believe that a real industry is in the making.

H. TROUTWINE,
Manager

Refugee Reichsfeld Finds a Real Haven In Sweden With His Son

Alfred Reichsfeld
—, Sweden
Oct. 27, 1939

Dear Mr. Taubeneck:

It gives me pleasure to inform you that I was fortunate to leave Vienna before the war broke out and went to —, Sweden, where I met my son, Robert, who has been here since the end of January and has been working as a machine repairman in a factory.

Sweden in comparison with Germany is a paradise. The people here are all very friendly and are keeping our presence here a secret and will keep it as long as possible.

The work here is also governed by the administration. However, we were given permission to remain here until the end of this year and hope that we will be given permission to remain still longer.

Fortunately we have found a capitalist who is willing to open a factory in — with us for refrigeration similar to the firm "Frigomat" in Vienna and we will begin furnishing it within the next few days.

We intend to use American compressors, motors, ventilators, and American equipment and for this reason I am again ordering the paper, AIR CONDITIONING & REFRIGERATION NEWS for another year. Please send the invoice and it will be paid by the new firm.

I hope and wish that with God's help it will be possible for us to stay in Sweden and start a new existence.

Again may I extend my gratitude and thanks for your trouble and hope that you will continue this help in the future. We are still trying to get a passport to America because there is no telling how the situation will turn out in Europe.

It would please me very much if you would write me a few words in the near future as to what the collection amounted to and please keep the money in your possession for the present until I am able to write you where I am established.

ALFRED REICHSFELD

Mr. Miyatake of Pahoa Gets Interested

P.O. Box 403
Pahoa, Hawaii
Nov. 8, 1939

Sirs:

Lately I began my studies in the line of refrigeration and found it to be very interesting. I've been reading your weekly issue of the AIR CONDITIONING & REFRIGERATION NEWS which proved to be a great help for me in this study. I was very glad to have gotten a chance of reading such news and am expecting to subscribe to the weekly newspaper.

I would like you to send me the little catalogue containing the names of books and the price list of each book that I've seen and became interested in it.

I would also like you to give me full information about the books and the cost price of the weekly paper.

MASAMI MIYATAKE

—Also Mr. Price Up In Canada

10809 98th St.
Edmonton, Alberta

Sirs:

I wish to inform you of my change in address. I have left my residence at 11701 80th St., and am now residing at 10809 98th St., Edmonton, Alberta, Canada.

I might at this time tell you how much I enjoy your publication. I find it very interesting and instructive from cover to cover.

JACK PRICE

Will Never Go Without The News Again

R. D. Caughdenay
Central Square, N. Y.

Sirs:

I have had this a long time as under Oliver Hall & Son name but now miss it and will never go without it again as long as I sell refrigeration, I hope.

FRED L. HALL

P.S. You can take Oliver Hall & Son off list as it is the same business.

Flash Electric Service
Electrical Contractors
2005 S. Beechwood St.
Philadelphia, Pa.
Oct. 23, 1939

Sirs:

I did not receive the Oct. 11 issue of AIR CONDITIONING & REFRIGERATION NEWS.

I do hope you will mail it as soon as possible—sorta miss it.

JOHN A. LOCILENTO

2448 University Ave.
New York, N. Y.

Sirs:

Thank you for my copy of Buyer's Guide. It is a most important book for any dealer engaged in this business.

Enclosed herewith, please find my check for $1. Kindly send me a copy of your book B-1, "How to Select and Install Air Conditioning Systems."

MORTIMER E. SHAFF

'Some Shucks' as a Salesman

Trades Two Hours' Work For One-Hour Sales Talk And Comes Out Ahead In Both Cases

WASHINGTON, D. C. — Getting right down in the "good earth" and working the fields with rural prospects brings a harvest of sales for J. T. Brown, farm sales specialist for District Line Hardware Co.

Calling on a prospect who was in the fields, shucking corn, Mr. Brown introduced himself as an appliance salesman and was rebuffed with the rejoinder that the farmer "didn't have time to fool with salesmen."

Mr. Brown asked the perspiring farmer if he didn't quit at sundown. The farmer said he did. Then Brown reminded him that it was good three hours before quitting time, and offered to work right along with the farmer for two hours in payment for one hour of attention to a sales presentation.

When the canny farmer asked him how he could be sure that he could shuck corn, Mr. Brown told him that if he didn't shuck as much corn as the farmer, no selling time would be asked. Fair enough, was the reply —and away they shucked.

The contest must have been a tie or better for Mr. Brown, for he came away with an order for an electric refrigerator by sundown.

Radio Group Pushes Excise Tax Appeal

WASHINGTON, D. C.—Pressing their fight for abolition of the 5% excise tax on radios, members of the special committee appointed by Radio Manufacturers Association emphasized their objections to the levy at a recent closed meeting with Treasury Department officials.

The association based its arguments for repeal of the tax on the assertions that the duty, imposed back in 1932 when profit margins were much higher than they are now, has become oppressive and burdensome on the industry as a whole; that radio is no longer a semi-luxury, in view of the progressive development of radio in the field of public service; and that the tax has ceased to be an important source of revenue to the federal government.

The committee pointed out that, while the tax resulted in as high as six million dollars in annual revenue, last year it brought in $4,834,000. It also was emphasized that, although radio sales have increased over the past few years, sales of lower-priced units have advanced to the point where the profit to the manufacturer is much smaller than in the past.

Ranges & Water Heaters Pace Georgia Sales

ATLANTA—Electric ranges and water heaters registered the greatest gains over 1938 sales in Georgia Power Co. territory during the first nine months of this year, a compilation by the utility firm shows. Range sales during the period were 2,003 units, as compared with 1,784 last year, and water heater sales amounted to 1,428 units, against 1,080 in 1938.

Electric refrigerator sales were down from comparable 1938 marks, the nine-month total being 3,054 units this year, against 3,214 last year. Washer sales were 721 units, compared with 644 last year, and ironer sales 105 units, against 112 in 1938. Vacuum cleaner sales totaled 407 units, as compared with 640 last year.

Chattanooga Sales Up Since TVA Took Over

CHATTANOOGA, Tenn.—Dealers sold $407,807 worth of electrical appliances during the two and one-half months after the Chattanooga Electric Power Board took over the properties of Tennessee Electric Power Co. on Aug. 15, reports S. R. Finley, superintendent of the board.

This figure compares with an estimated total of $700,000 worth of appliances sold by dealers and Tennessee Electric Power Co. during the entire year of 1938.

9-Month Cleaner Sales Pass Million Mark

CLEVELAND — Vacuum cleaner sales for 1939 passed the 1,000,000-unit mark in September, sales for the first nine months of the year reaching a total of 1,000,251 units, according to an announcement by C. G. Frantz, secretary of the Vacuum Cleaner Manufacturers' Association.

Sales for the first nine months of last year were 940,409 units, 6.3% below the 1939 record.

Sales in September of this year totaled 120,708 units, exceeding sales for September, 1938 by 18.3%, and topping sales of August, 1939 (96,601 units) by 24.8%.

Frigidaire Low Bidder On Dayton Project

DAYTON, Ohio — Frigidaire was low bidder on a contract for 201 electric refrigerators to be installed in the new DeSoto Bass Courts, a low-cost Negro housing project now nearing completion under direction of the Dayton Metropolitan Housing Authority.

Frigidaire's bid was $12,161. Contracts will be awarded as soon as tabulations have been completed and approved by the FHA in Washington, D. C.

67-Apartment Building Made All-Electric

CHICAGO — Complete electric kitchens designed and installed by R. Cooper Jr., Inc., General Electric distributor here, have been incorporated into a remodeled and modernized apartment building on Lake Shore Drive.

In addition to electric ranges and refrigerators, these kitchens are equipped with all-steel cabinets and up-to-date sink units.

In the course of the transformation, 10 16-room apartments in this building were converted into 67 thoroughly modern two, three, four, and five-room apartments.

Hotpoint Kitchen Serves Venezuelan Embassy

WASHINGTON, D. C.—A complete Hotpoint electric kitchen has been installed in the new $1,000,000 Venezuelan Embassy here by Simon Distributing Corp., Baltimore and Washington Hotpoint distributor.

This installation includes three Hotpoint refrigerators, two of 8 cu. ft. and one of 16-cu. ft. capacity; three Hotpoint ranges, two of two-oven style and one warm-over range, and two Hotpoint water heaters, each of 140-gallon capacity.

Refrigerator Tax Values Gain In Nebraska

LINCOLN, Neb. — Both number and total value of mechanical refrigerators in use in Nebraska showed an increase this year, despite the fact that value of all household goods, for taxation purposes, was below that of the last two years.

Number of mechanical refrigerators in the state increased from 68,970 to 112,452, and their valuation from $3,385,472 to $4,060,769, according to State Tax Commissioner W. H. Smith. Meanwhile, value of all household goods dropped to $6,785,395, as compared to $7,282,855 a year ago and $7,911,840 in 1937.

An increase in the number of refrigerators was shown in every county of the state. In Lancaster (Lincoln) county the number of units rose from 11,352 to 12,350, but valuation dropped from $760,515 to $661,535.

Schick Shaver Patents Upheld By Court

NEW YORK CITY—Final decrees sustaining the Schick Dry Shaver patents and finding them infringed have been entered by the United States District Courts in New York and New Haven, Conn. in suits which the Schick firm, pioneer manufacturer of electric razors, had brought against Sears, Roebuck & Co. of Chicago, Utility Instrument Co. of Cranford, N. J., and the Waterbury Clock Co. of Waterbury, Conn.

President of the Schick company is Ralph Cordiner, veteran electrical appliance executive formerly with General Electric Co.

The Sears and Utility suits were decided in favor of Schick in July, but both defendants appealed the decision. These appeals have now been withdrawn and the firms have consented to the judgments entered. These suits affect the "Champion" razor made by Utility Instrument Co. for Sears, and also such other shavers manufactured by the Utility firm for sale by itself or other companies as the "Utility" shaver, the "Bamberger" sold by Bamberger's of Newark, N. J., the "Lockheed" sold by Walgreen drug stores, and the "Electrex" sold by United Drug Co. and Liggett's.

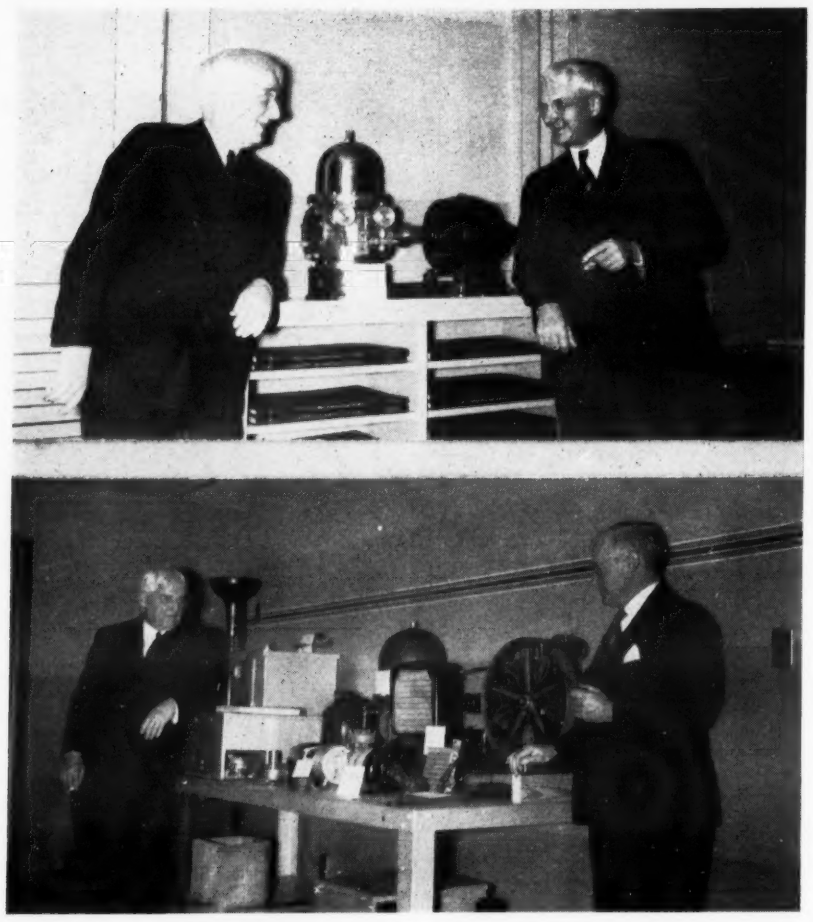
At the time the cases against Sears-Roebuck and Utility Instrument were decided, the same judge ruled in favor of the Schick company in a similar patent infringement suit against R. H. Macy & Co., Inc. and its "Saybrooke Electric Razor." Macy's, however, has appealed the decision.

Luebbe Named G-E Counsel

BRIDGEPORT, Conn. — Ray H. Luebbe, since 1927 a member of the legal department of General Electric Co., has been named counsel of the company's appliance and merchandise department.

Pioneers' Meeting Stimulates Interest In the Refrigeration Museum

Early Models Now on Display



(Above) E. T. Williams (left), first contributor to The Refrigeration Museum, tells Glenn Muffly (right) that this bronze condensing unit was first exhibited at the New York Electrical Show in October, 1914, and that it was maintained in operation at the New York Edison Co.'s showroom for several years. The machine is covered by U. S. Patent No. 1,164,689.

(Below) E. T. Williams (left) and D. P. Heath (right) look over the collection of early models on display in the News building. The unit with the fancy flywheel is an old Isko furnished by Mr. Heath, who was the second donor to the Museum.

Engineers who attended the "Old Timers Meeting" expressed their approval of the Museum, originally started by the News and now sponsored by the Detroit section of the A.S.R.E. Immediate additions to the collection of relics were promised by several pioneers.

'Old Timers' Tell of Their Early Problems

(Continued from Page 1 Column 3)

have much lighter and smaller parts."

"Our biggest problem in those early days," Mr. Perham said, "was service. Every service call was expensive because our territory was so large. Therefore, each installation called for the closest calculation; allowing, of course, for what we called 'the factor of ignorance.' As a consequence we had very little service, two service men taking care of the service in 11 states."

Most of the jobs installed were from ¼ to 32-tons capacity, Mr. Perham said, and it was the usual practice to restrict the service on these jobs to yearly inspection trips.

An amusing story of one of these early installations in a cold storage plant was told by Mr. Perham. The owner of the plant in receiving instructions on the operation of the refrigerating machinery asked if it would be possible to control the temperature by turning the adjusting screws in the thermostat.

"Yes, that's possible," Mr. Perham told the man.

"Well, I don't believe it will do all you say it will," returned the plant owner, "but I'll see how it works."

A year passed. Mr. Perham called back to see the plant owner and to check the machinery. The plant owner agreed that the temperature of the cold storage room could be controlled by turning the screws in the somewhat unwieldy thermostat. It seems he received a carload of poultry and wanted to make sure the temperature would be cold enough to keep the birds.

He made sure, all right. He turned the screws on the thermostat so far that the temperature went down to around 24° F. and froze the poultry as stiff as a board. "At least," remarked Mr. Perham, "it proved that I wasn't wrong when I told the man that the temperature could be controlled by the thermostat screws."

Howard Dennedy's Father Pioneered Before Him

The story told by J. H. Dennedy, M.I.T. graduate, former chief engineer of Frigidaire, and now chief engineer with Sunbeam Electric Mfg. Co. (maker of Sears-Roebuck's "Coldspot" unit), was largely the tale of his father's activities in the refrigeration field.

Referring to himself as practically a newcomer to refrigeration (although he entered the industry in 1908), Mr. Dennedy described his father as "a real refrigeration pioneer," despite the fact that he was not technically trained in this line.

"While still in Scotland," Mr. Dennedy explained, "my father learned the trade of locomotive repair man, and it was in that capacity that he came to this country and started work in Cincinnati.

"One day as he was recuperating from an illness, he went out for a walk and happened to pass a brewery in front of which some men were just unloading some new refrigeration equipment. Being mechanically inclined, father immediately became interested in this machinery and started to ask questions.

"When he learned that this equipment was to be installed in the brewery, he immediately went inside and asked for the job of setting the machinery in place and preparing it for operation. He got the job, and it was in this way that he chanced to set up the first refrigerating machine in Cincinnati. This was in 1885 or 1886.

"Having thus become interested in refrigeration, Father accepted the job of operating engineer for the refrigeration plant which he had installed. This was his real entry into the field.

"Sensing the possibilities in this new business, some enterprising Cincinnati firm soon started to make refrigerating equipment, and Father became a salesman for this company."

At first, Mr. Dennedy recalled, there was no thought of automatic control for refrigeration equipment. "I'm glad that I've lived to see mechanical refrigeration supplant ice," he declared, "but I'm especially glad that I've lived to see automatic control supplant manual operation.

"Lots of progress has been made in refrigeration in the last 20 or 25 years," Mr. Dennedy stated. "Why, when I went to Boston Tech my professor summarized the school's refrigeration instruction by saying, 'We have one lecture in refrigeration and I can give you lots of good references.'

"Even at that, some of the little information we did receive was incorrect. Some of the professor's errors were so glaring that I once undertook to correct him. He listened appreciatively, and then sighed, 'Maybe you'd better give this lecture —you apparently know more about refrigeration than I do.'"

Earliest Units Were Well Engineered, H. B. Hull Says

H. B. Hull of Frigidaire, holder of some 125 patents and author of a book on household refrigeration that has run through four editions, recalled his early days with York Ice Machinery Corp. (1913-17) when large construction jobs were the rule. On one job in a Shenandoah, Pa. brewery, he said, the crew had to work out on the roof in below-zero temperature. Another such job was a 600-ton installation for Eastman Kodak Co., in which, Mr. Hull said, "there was enough cast iron in the discharge valve alone to make a complete compressor today."

At York, Mr. Hull worked with Louis S. Morse, Sr., father of the present vice chairman of the Detroit A.S.R.E. section, Louis S. Morse, Jr.

Reviewing experiences in the early days of the refrigeration industry, Mr. Hull recalled the Audiffren unit, made by General Electric and sold by Johns-Manville, an SO_2 machine which was on the market around 1912. The American Expeditionary Forces used 30 of these units in France, he said, and Charles F. Kettering, dean of General Motors research men, had one of the machines in his home.

He recalled that, after Mr. Kettering had used the machine for about 10 years, it was left to lie around outside for five or six years. Reassembled, it ran as well as ever—indicating that, despite their bulk, the early machines were well engineered.

Industry statisticians during the past eight years have noticed an increasingly close relationship between household refrigeration sales and national income, Mr. Hull declared, indicating that this equipment is falling into the "regular commodity" class. A 10% increase in national income, he said, has been accompanied by a 15% rise in refrigerator sales; a 10% drop by a corresponding falling off in sales.

Getting out of this "trend line" should be a major consideration of the industry, Mr. Hull advised. New inventions, sales plans, or some similar happening would do it, he said.

Fred Geiler Chuckles Over Some Past Service Calls

Fred Geiler, who entered the refrigeration picture 25 years ago, had a wealth of stories and anecdotes about his early problems and successes in manufacturing and selling household refrigerating machines. He got into the refrigeration business in Dayton in 1914.

Around 1918, Mr. Geiler was associated with an engineering firm which was building commercial sulphur dioxide jobs in 2 to 5-ton sizes. They were using basically sulphur dioxide with about 3% carbon dioxide. "We found that this mixture wouldn't 'stay put,'" he said. The company was interested in getting into the manufacture of household refrigeration and the interviews with assorted crackpots and perpetual motion artists were as many as they were amusing.

"We then developed a complete control," said Mr. Geiler, "including the water valve and thermostatic control. We received an order for 1,000 controls from a company manufacturing household refrigerators, and were to receive $20 apiece for them. The company got all the tools necessary for the manufacture of the control, went into production, and was all ready to start delivery when the company which had ordered the controls went into receivership.

"There we were," said Mr. Geiler, "with $20,000 worth of tools and machinery. What did we do? We decided to go into the business of manufacturing household refrigerators, building the machine around the control we had developed. We built a water-cooled machine with a chain drive. We usually put the machines in the basement, using the customer's own icebox on the floor above for food storage.

"The machines were pretty expensive," Mr. Geiler recalled, "selling for around $300. Naturally, our customers were 'selective.' One of the first jobs we put in was in a big, nicely appointed home. We suspended the unit from the rafters and started it up.

"The owner of the house came running down the cellar steps and shouted, 'What the hell are you fellows trying to do? The grand piano has started playing.'

"And darned if he wasn't right," chuckled Mr. Geiler. "The vibrations from the suspended refrigeration unit had actually struck up some chords on the piano. We put the unit in a brick wall and stopped the vibrations enough to still the impromptu piano solo."

Mr. Geiler then told about a unit he sold to a friend of his. After a time the man called in and complained that the new gadget wasn't working and that the milk kept in the refrigerator had turned sour. When Mr. Geiler called to check the complaint he found that it was so badly in need of defrosting that it was bursting with ice. He tried to explain to his friend, but the man could only point to the great quantities of collected ice in demanding to know why the food spoiled in the midst of all that "cold."

"Why you've got to defrost this machine," said Mr. Geiler, patiently.

"Defrost," said the man, now very puzzled, "that's something I never heard of."

"You ought to turn this thing off for about three days," Mr. Geiler

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'OLD TIMERS'

(Continued from Page 10, Column 5)

advised. And to make sure, he took away the fuse with him.

"In the early 20's," Mr. Geiler related, "we had plenty of those service complaints. I recall one of our dealers in Cincinnati had a call from a woman who claimed she was not getting ice cubes fast enough.

This woman lived in a duplex apartment, her mother-in-law occupying the upstairs quarters. When the service man arrived on the scene to check the ice cube shortage, he came upon the woman scurrying upstairs with a pan brimming with ice cubes. "Still she wondered how come there wasn't ice enough for the two families," said Mr. Geiler with a chuckle.

He then told of another woman who beefed that her new electric refrigerator was not making ice cubes. Investigating, the service man found that she had not put any water in the trays. When it was explained to her that water should be put in after removing the frozen cubes she drew herself up, rather outraged, and said, "Why, they told me this refrigerator was automatic."

Along about 1925 the big financial centers became conscious of the possibilities of the household electric refrigerator, Mr. Geiler recalled. "The Knickerbocker Ice & Fuel Co. of New York City became interested, but old Thomas Fortune Ryan's son, Allan, had the company in a hole. He turned thumbs down on 'the new gadget,' reasoning that the household electric refrigerator would be an economic impossibility because it would be necessary to 'have an engineer living in every home having an electric refrigerator.'"

Bill Heaney Wouldn't Stick To Coal Chutes

William Heaney, president of the American Refrigerating Co., Detroit, spoke briefly about his experiences in the industry in 1911-12. Mr. Heaney related that he had continued in the business up to the present day, in spite of the fact that he was told by his friends in the early days that there was "more money in a coal chute—because it is needed in every home—than there would ever be in the refrigeration field."

Heideman Says Industry Is Still Pioneering

Fred J. Heideman of Detroit is entitled to membership in the industry's "old times," because of his early association with Fred W. Wolf of Chicago in the development of the "Domelerey" refrigerator in Chicago, about 1912. This machine was later taken over by Henry B. Joy of Detroit and became known as the "Isko."

Mr. Heideman recalled how the "old timers" had bridged the gap between industrial and household refrigeration, progressing from direct expansion systems to high-side and low-side floats, and back to direct expansion again. He gave due credit to the fact that J. H. Dennedy's father had "brought SO_2 to this country."

"Refrigeration is still in its infancy," Mr. Heideman said, "and may be considered in the pioneer stage today. Changes will come every four or five years, and new applications will be found.

"One great drawback to the industry has been the service problem —refrigeration service needs better organizations all over the country."

Relating how he had attempted to interest the City Ice & Fuel Co. in household refrigeration, in spite of the fact that John E. Starr had said that "development of a domestic refrigerator is positively impossible," Mr. Heideman had argued that if the Studebaker Co., a firm of carriage makers, could get profits out of the automotive industry, then it was reasonable that the ice people could get profits out of household refrigerators.

Because of the fact that the ice people "did not know anything about ice making in the home" and because the industry was then not equipped to sell household refrigeration on a national scale," Mr. Heideman regretted that he had "ever sold them a machine," in referring to the sale of the Freezerator Co. to the City Ice & Fuel Co. about 1921.

Citing an incident in the early days of marketing household refrigerators, Mr. Heideman told about going on a service call to a dealer's store located in a remote rural area.

"As we approached the dealer's place of business, which was a small cross-roads country store," Mr. Heideman related, "I noticed that no electric wires were connected to the building. The refrigerator had been on the floor for about 18 months. I asked the dealer what the trouble was, and he stated that the refrigerator was all right, 'but the damn thing has been here a long time and it just won't work!'"

Penny Postcard Started Heath In Refrigeration

A penny postcard got D. P. Heath into the refrigeration industry. The Detroit engineer and inventor, who is chairman of the Detroit section of A.S.R.E., told how one of the three answers he'd received from a mailing of 300 job-letters had come from E. J. Copeland, who was looking for a sales manager. Mr. Copeland sent young Mr. Heath over to Household Utilities Corp., where Fred Heideman put him to work as a drill press operator.

Mr. Heath worked himself up to the post of chief engineer. At that time, he recalled, units sold for $450, with guarantees running between 30 and 90 days. When the company broke up following the death of its president, Mr. Heath bought one of the units for $185—and had to fashion his own shut-off, expansion valve, and thermostatic valve.

In 1923, Mr. Heath took over Isko servicing for Detroit. At that time about 80 units were in operation in this area, some dozen of which are still in use today. Working with these units, he had some rather out-of-the-ordinary experiences.

He recalled an experience with a Mr. Thurber, then service manager for Kelvinator. On a service call to a user in Toledo, the men had used a rubber hammer to loosen a stuck valve; that was all they had to do. Not long after, they received a letter from the user, enclosing $1.50 and a note: "Send me a rubber hammer—hereafter I'll do my own servicing."

Mr. Heath asked for information on the early history of the various companies in the refrigeration industry, both past and present, "to get the record straight," and told of the plans to assemble a Refrigeration Museum and present it to Henry Ford's Edison Museum next spring, if possible.

He asked for contributions of early machines, equipment, and other industry data to round out the Refrigeration Museum and make it truly representative of the industry's formative period.

Thompson Recounts Copeland's Early Dreams

Harry Thompson, president of Copeland Refrigeration Corp. and another one of the boys who's been in the refrigeration business since 'way back when, expressed regret that Ed Copeland, founder of the company which Mr. Thompson heads, could not be present to enjoy this gathering of the old timers.

Mr. Thompson recollected that once back in the early days he and Mr. Copeland were riding along one of Detroit's main residential thoroughfares when Mr. Copeland, who had been gazing at the rows and rows of houses for some time, made this prophecy: "Some day, Harry, there'll be some sort of a mechanical refrigerator in every house on this street."

"I just laughed at him then," Mr. Thompson recalled, "and answered him jokingly by saying, 'Ed, if we equipped all these homes with mechanical refrigeration we'd have a bigger headache factory than Hiram Walker has over in Windsor.'" (The Hiram Walker distilleries are located in Windsor, Ont., just across the river from Detroit.)

"The refrigeration pioneers were real pioneers in every sense of the word," Mr. Thompson declared. "When they were faced with some new problem or some new obstacle they didn't sit back and whine and quit—they went right ahead with their job of developing and supplying a commodity which would bring untold comfort to great numbers of people."

Riley Shows Copies of Early Advertisements

Frank Riley of Detroit, veteran of 28 years in the refrigeration industry, jokingly asserted that his first interest in refrigeration began when, as a small baby, he kicked the slats out of the cradle and called for cold beer. When the beer was served warm, he began thinking that there must be some way to get cold beer for children. With this thought his interest in refrigeration was born, and continued on through his first connection with the industry in 1911, up to the present day.

The first compressor designed by Mr. Riley was built in a small shop in Toledo, where his efforts in designing a refrigerating machine were supplemented by the work of William H. Haynor. Two machines were sold to the president of the Burroughs Adding Machine Co. at $5,000 each, and the second year, 1912, saw the production of five household machines. These units had 1½ x 1¼ ammonia compressors, were equipped with a water bottle on the cabinet, and refrigeration was produced by the use of a brine cooler. The units were operated by automatic controls.

Later the Refrigeration Engineering Co. was organized, and, according to Mr. Riley, the company had a stroke of good fortune in 1917 and 1918, when its equipment was approved for use on vessels going through the war zone.

Refrigerating equipment was located on the deck of ships, the theory being that if a shell destroyed the machinery, there would not be any damage to passengers and crew by escaping ammonia.

About this time August P. Anderson joined Mr. Riley's organization, and in 1919 the Toledo Coldmaker Co. was formed. Mr. Anderson designed a water cooled ammonia machine to fit a side-icer household box. Sears, Roebuck & Co. were interested in this unit, but according to Mr. Riley, "decided not to take it on."

One of the first national advertisements of the household electric refrigerator was a full page appearing in the Saturday Evening Post on Oct. 2, 1920. Released by the Toledo Coldmaker Co. through the Martin V. Kelly agency, the advertisement was run at a cost of $7,000. Advertisements for "Isko" refrigerators had appeared in 1916.

Later Mr. Riley was associated briefly with the Absopure Ice Cream Co. of Detroit, and in 1922 joined the Detroit Creamery Co. It was about this time, Mr. Riley related, that when complaints were made about the noise coming from early Nizer machines operating in the Detroit Creamery plant. Nizer representatives declared that the noise was "a good advertisement—lets people know you have refrigerating machines."

Mr. Riley displayed a number of early advertisements for household refrigeration from the Saturday Evening Post and other magazines. He also exhibited a number of promotion pieces used in advancing the refrigeration industry. Among these was a letter from Frank W. Wolf, of Chicago, offering territorial rights for his refrigerators. The letter stated that "anyone making or selling mechanical refrigeration either stole, borrowed, or copied the idea from me."

Stevenson Tells of Steenstrup & Monitor Top

A. R. Stevenson of General Electric told of his own beginnings in the household refrigeration field around 1923, following work by J. J. Wood and Clark Orr at the Fort Wayne, Ind. plant of the company. These men had produced units as early as 1921 for use in company officials' homes. The machines were called "The Rolls Royce of Refrigeration."

Before going into the industry in

(Concluded on Page 14, Column 3)

Harry Alter Co. Extends Parts Supply Jobbing Warehouses To 12 In Sixth Year In the Trade

CHICAGO—The Harry Alter Co., refrigeration supply jobber with headquarters at 1728 S. Michigan Ave., Chicago, has recently announced the opening of four new warehouses in the New York metropolitan district.

This brings the company's total number of warehouses to 12. This jobber's business can be called "world wide" in scope, since the company has a large export business through its mail order setup.

The new branches are located at 339 E. 162nd St., the Bronx, with Roy Greenberg as manager; 1130 Bedford Ave., Brooklyn, with Bill Rappaport as manager; 145 Jamaica Ave., Jamaica, N. Y., with Hans Mannheimer as manager; and 159 South Orange Ave., Newark, N. J., with Marty Krawczyk as manager.

Personnel of the Harry Alter Co. is comprised of men who have much experience in marketing various types of mechanical devices and accessories before entering the refrigeration field, the firm being founded 20 years ago. In its early days it was known to the trade as a wholesaler of electrical equipment, and later as a distributor of electrical appliances.

About six years ago the company got started in the refrigeration parts and supplies jobbing field, and this business grew so rapidly that it eventually pushed the other lines out of the picture. While operations outside of the Chicago area were at first conducted solely through a catalog type of operation, warehouses were later placed in metropolitan areas, this plan being extended until there are now 12 such warehouses.

There are four Alter brothers active in the business. Harry Alter is president of the concern, and is well known in industry circles, being at one time president of General Household Utilities Co.

Irving Alter, secretary and treasurer and merchandise manager of the company, is the man responsible for many of the company's merchandising plans and methods of handling the parts jobbing business. He is known throughout the trade also for his work in helping to organize and develop the National Refrigeration Supply Jobbers Association, in which he is now an officer.

Arthur Alter, vice president in charge of sales, is active in the trade, and makes calls on service men in both metropolitan areas and in outlying territories. Leo Alter is vice president and manager of the eastern division, and as such will supervise the operation of the new branches.

The Four Alters

HARRY ALTER, President — LEO ALTER, Vice President, Mgr. Eastern Div.

ARTHUR ALTER, Vice President, Sales Mgr. — IRVING ALTER, Secy. and Treas., Mdse. Mgr.

Action Is Sought on Baumgardner Accounts

TOLEDO—Fred H. Kruse and Frank C. Kniffin, referees for Baumgardner Distributing Co., bankrupt, have notified creditors that an application has been filed for the sale of uncollected accounts receivable of the defunct concern.

'Sales Talk' For Selling Oil Separators To Commercial Refrigeration Users

Editor's Note: Manufacturers of replacement parts and accessories for commercial refrigeration systems are making an effort to get service and installation men to "sell" new or additional equipment to users. The following article is the written version of a talk which Mr. Kellie has delivered before meetings of service men, in which he gives a "suggested sales talk" for selling an oil separator to a user of a commercial refrigeration system.

By Ed. Kellie, American Injector Co.

Every user of electric refrigeration expects three things of his equipment.

First, he wants satisfactory refrigeration of the commodities which he places in the refrigerator whether it be ice cream, milk, beverages, or meat, etc., and he wants this protection 24 hours a day and every day.

Second, he wants the above with a minimum of power consumption, that is, with as small electric power bills as possible.

Third, he wants his repair and maintenance bills to be kept down and he wants to avoid breakdowns which may allow his commodities to spoil.

To increase the efficiency of refrigeration units, to secure constant and continuous maintaining of correct temperatures, to bring power costs down to a minimum and to keep them there, to prevent costly breakdowns, and to lengthen the life of the equipment thereby reducing the investment, servicemen and manufacturers all over the country have recommended and installed oil separators for several years.

How can an oil separator accomplish all of this? Let us tell you in simple everyday language. Every electric refrigerator is composed of two main parts, namely, the compressor unit and the cooling coils.

The function of the compressor unit is to take the warmed-up refrigerant gas from the cooling coils, compress it, change it to a liquid, and send that liquid back to the coils.

The cooling coils act as a boiler; when the liquid refrigerant enters them they allow it to boil within them, but they must get heat in order to boil the refrigerant into a gas. They take this heat out of the box or show case and in so doing cool it and its contents.

The compressor itself has several moving parts including pistons, connecting rods, and cranks. They must receive a constant supply of oil, so the crankcase is filled to a certain level with oil. This level must be maintained.

During operation, a certain amount of this oil is pumped over by the compressor. This ordinarily mixes with the refrigerant like ink does with water and goes along with it to the cooling coils where the liquid refrigerant boils off and is drawn away as a gas leaving the oil in the cooling coils. Some of the oil may drain back to the compressor, but some always stays in the cooling coils.

This condition causes several things to occur. First, the oil is gradually transferred from the crankcase to to the cooling coils. This means lowered oil level and consequently insufficient lubrication of the moving parts which results in a costly breakdown and replacement of parts.

Second, the oil in the cooling coils coats the inside of the tubing and insulates it so that the passage of heat from the box into the refrigerant is slowed down. This means that the unit has to run for a greater length of time to extract the same amount of heat.

Third, as the quantity of oil in the cooling coils increases it takes up space which is needed for the refrigerant and results in less quantity of refrigerant circulating per minute of running time. This means that the unit must run for a longer period and oftener in order to circulate the amount of refrigerant required to keep the box at the desired temperature.

Fourth, eventually the cooling coils will become practically full of oil thus reducing the circulation of refrigerant to the point where cooling effect ceases. This results in ice cream melting, milk spoiling, beverages being too warm to serve; in short, loss of money through spoilage and dissatisfied customers.

In some cases when the cooling coils become filled with oil, this will slug back to the compressor throwing a strain on it and the motor which may cause breakdown or at least shorten their lives. If the oil does slug back, then the cycle starts all over again. Obviously this means that as the oil gradually goes over to the coils and the quantity in them changes, so does the amount of cooling done by the coils change. Therefore, constant and continuous refrigeration is impossible.

Summarizing the foregoing, we find that transfer of oil from the compressor however slowly it takes place eventually leads to improper operation and longer and more frequent running cycles. This means breakdowns, commodity spoilage, and increased power costs. Obviously it is desirable that the oil be kept out of circulation and be kept in the crankcase.

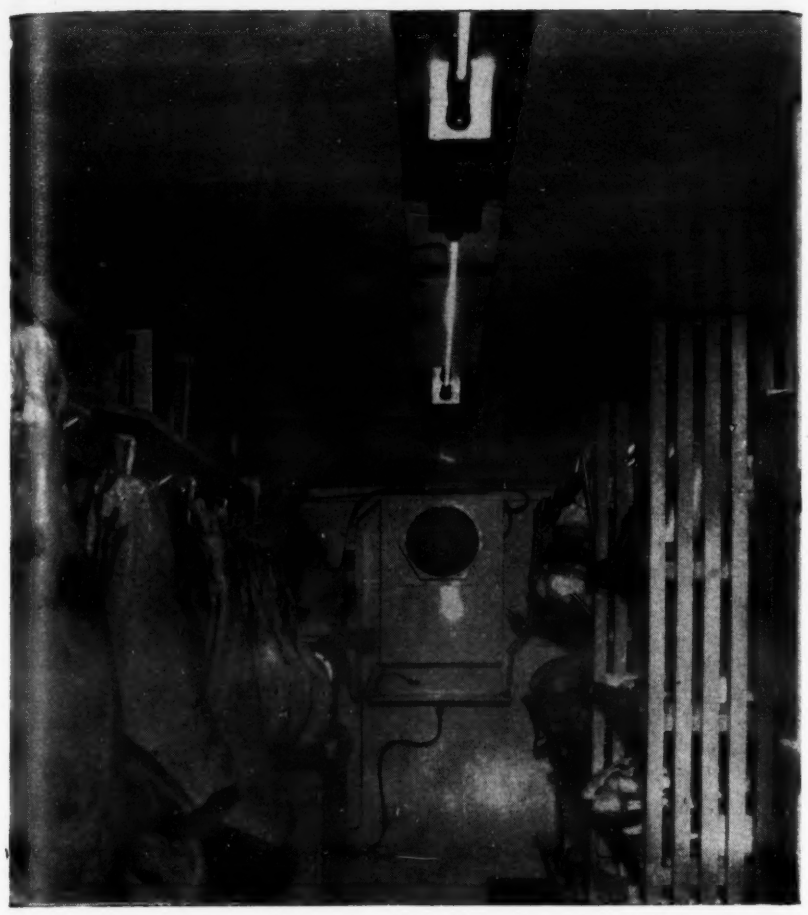
Our oil separator is installed in the discharge line from the compressor. It has a series of baffles which remove the oil from the refrigerant while it is still a gas; there is a float valve which automatically returns the oil to the crankcase.

Thus our oil separator keeps the oil from circulating to the coils, thereby keeping them in top condition for refrigerating, keeping them at full capacity so as to reduce operating time to a minimum, cutting power costs from 15% to as high as 30% in many instances. Also, by keeping them at full capacity it keeps their cooling effect at a constant rate.

The automatic oil return feature returns the oil from the shell of the separator to the crankcase, thus assuring correct oil level and proper lubrication at all times, thereby decreasing costly breakdown, replacement of parts, and service work.

Therefore, we say the oil separator saves you money by reducing operating costs, by preventing breakdowns, and spoilage.

Proper Location Necessary For Good Sterilamp Operation



Ceiling installation of Sterilamps. Note the unit cooler on the rear wall.

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By T. R. Porter, Special Products Dept., Lamp Division, Westinghouse Electric & Mfg. Co.

Editor's Note: This is the second in a series of articles explaining how Sterilamps are used in commercial refrigeration.

Planning the Layout

Generally speaking, the commercial refrigeration dealer, in looking over a walk-in box of a prospective customer, will find three types of conditions, described as follows:

1. A box that is in such a condition that it will be possible to obtain the proper balance and control of the four necessary elements for Rentschlerizing without any difficulty or addition of equipment other than Sterilamps.

2. A box where in addition to the Sterilamps it will be necessary to install any or all such items as automatic temperature control, humidifier, and fan to obtain sufficient air circulation.

3. A box of such type and condition as to require all of the equipment and modifications of (1) and (2), and where the prospect is reluctant to provide them. In such a case, only partial results can be obtained, as would be expected.

A study of the existing temperature, humidity, and air circulation conditions should be made. Where temperature is controlled by a hand operated valve, there is certain to be more variation in temperature and humidity than is desirable, and consequently an automatic temperature control should be recommended.

If there is a fan or unit cooler in the box, the circulation is usually more than sufficient for the purpose of the process. Attention must be given to adjusting the baffles so that no blast of air is directed on the meat or the Sterilamps.

Other conditions which should be observed in laying out the installation, and which must be given consideration, are cutting rooms just outside the walk-in box, which, if not equipped with Sterilamps, may be a continual source of contamination.

A freezer or display case connected with the refrigeration system of the walk-in box is certain to cause fluctuation in temperature and humidity. There may be other elements of this kind, such as series connection of cooling coils for different purposes, which make independent control of the refrigerator impractical.

Temperature control within a range of 8° from maximum to minimum is required for satisfactory operation of the Rentschlerizing process.

*Trade mark registered U. S. Patent Office.

Instructions For Layout; Arrangement of Sterilamps

In planning an installation of Sterilamps*, the problem should be considered essentially the same as though the space was to be lighted with incandescent lamps; that is, the aim is to provide as nearly as possible uniform radiation throughout the refrigerator.

Wherever possible, the lamps should be mounted at the upper portion of the box. The locations of Sterilamps* in a refrigerator are modified by a number of conditions which must be considered in making the layout. The lamps may be placed on the ceiling of the refrigerator if there are no obstructions, such as cooling coils and bunkers, or drip pans which will prevent the direct radiation reaching the meat stored in the lower part of the box.

The Sterilamps* should not be mounted on the ceiling if the ceiling is high (more than 10 feet). Other conditions, such as air blast from a unit cooler may modify the position of the lamps.

The second place to consider for the position of Sterilamps* is on the bunkers in those refrigerators which have a continuous drip pan supported by a wooden baffle or bunker under the whole area of the coil. If a distance from the floor to bunker is less than 7 feet, it will be necessary to protect the Sterilamps* with a wire mesh screen.

The third position to be considered for the Sterilamps*, especially in small boxes where the bunkers are low, is on the side walls just below the lower edge of the bunker. This arrangement is undesirable if the meat rails are so close to the prospective position of the Sterilamps* that the meat obstructs the radiation.

The only other practical location is on the wall over the door. If the Sterilamps* must be placed on a wall in the cool air current, they should be shielded from the current of cold air by placing a narrow deflector about 2 or 3 inches wide and 3 feet long, sloping down from the wall at an angle of about 45° and placed parallel with the lamps at approximately 3 to 6 inches above the lamp. Lamps should not be placed so that they are within 2 feet of meat which is hung for more than a few hours.

Where unit coolers are used, the Sterilamps may usually be placed on the ceiling, as, in most cases, there are no obstructions. However, it is undesirable to have the Sterilamps* directly in the air blast from the cooler.

Sometimes the cool air is directed upward toward the ceiling by means of baffles or louvers on the cooler, and if lamps are placed directly in this air current, the output is materially reduced and the life of the lamps is also shortened.

If it is absolutely necessary to position the lamps in the air stream, shields or deflectors should be provided to deflect the current of air away from the lamp. This may be done by a baffle, such as described, for side wall mounting and the effect may also be minimized by placing the lamps with the end of the fixture toward the cooler so that the lamps will be parallel to the direction of airflow. A narrow deflector at an angle of 45° at the end of the fixture will give the protection.

Table 1—Sterilamps In Small Refrigerators

Floor Area	Sterilamps* No. and Size	Approximate No. Cu. Ft. per 30 in. Lamp
30 sq. ft.	1 — 30 in.	250-300 cu. ft.
40 sq. ft.	2 — 20 in.	250-300 cu. ft.
50 sq. ft.	1-30 in. & 1-20 in.	250-300 cu. ft.
60 sq. ft.	2 — 30 in.	300-350 cu. ft.
70 sq. ft.	2 — 30 in.	300-350 cu. ft.
80 sq. ft.	2-30 in. & 1-20 in.	300-350 cu. ft.
90 sq. ft.	3 — 30 in.	300-350 cu. ft.
100 sq. ft.	3 — 30 in.	300-350 cu. ft.

Table 2—Sterilamps In Large Refrigerators

Floor Area	Sterilamps* No. and Size	Approximate No. Cu. Ft. per 30 in. Lamp
110- 150 sq. ft.	4 — 30 in.	350-400 cu. ft.
200 sq. ft.	6 — 30 in.	350-400 cu. ft.
300 sq. ft.	8 — 30 in.	350-400 cu. ft.
500 sq. ft.	12 — 30 in.	400-500 cu. ft.
1,000 sq. ft.	20- 24 — 30 in.	500 cu. ft.
2,000 sq. ft.	40- 44 — 30 in.	500 cu. ft.
5,000 sq. ft.	96-108 — 30 in.	500 cu. ft.

Number of Sterilamps Required

Small Refrigerators (Up to and Including 100 Square Feet of Floor Area)

The number of Sterilamps* required in a small refrigerator may be determined by considering that one 30-inch Sterilamp* is required for every 30 square feet of floor area. This is on the assumption that the ceiling height of a refrigerator does not exceed 10 feet. In a small refrigerator, a large part of the radiation is lost by absorption on the walls and floor.

Table 1 (see above) gives the estimated number of Sterilamps* for various size of small refrigerators, together with the number of square and cubic feet per lamp, which may be considered standard practice.

Large Refrigerators

In larger refrigerators (over 100 square feet), there is more chance for the radiation from one Sterilamp* to be reinforced by the radiations from an adjacent lamp so that the number of square feet per lamp may be increased up to a maximum of about 50 square feet per 30-inch lamp, provided the ceiling height does not exceed 10 feet.

Where the ceiling height is 10 to 12 feet, the number of 30-inch Sterilamps* must be such as to give one lamp for every 350 cubic feet of volume. If the ceiling height is 13 to 16 feet, the number of Sterilamps* should be increased to give about one 30-inch Sterilamp for not more than 500 cubic feet.

Table 2 (see above) gives the estimated number of Sterilamps* for various sizes of large refrigerators, together with the number of square and cubic feet per lamp which may be considered standard practice.

(To Be Continued)

Valley Refrigeration Co. Is Formed In Green Bay

GREEN BAY, Wis.—The Valley Refrigeration Co. has filed articles of incorporation here to engage in the commercial and industrial refrigeration and air-conditioning business. Incorporators are R. A. Klockner, J. B. Schouten, and B. S. Schouten.

Mart Figures Show Gain In Sales, Prices Steady

(Concluded from Page 1, Column 5)

Barometer of Wholesale Buying.

After a poll of 4,000 lines of manufactured goods in the house furnishings, apparel, building, and related fields, October sales by Merchandise Mart firms were set at $15,018,967, an increase of 20% over the volume of $12,511,576 in the same lines during the corresponding month of 1938. September sales in the same lines were $17,531,576.

In the heavy appliances, the survey says, advance rumors indicate an effort to hold down unit prices despite rising material and labor costs. Washing machines, for one, are expected to be sold lower in 1940, it reports. Small appliances in the midst of Christmas gift selling, showed individual increases of 60 and 70% over a year ago.

In the housewares field, October sales of $2,434,211 by Mart firms exceeded September by 13% and October, 1938, by 21%. Increased aircraft output is said to have had a slight tightening effect on the aluminum market, as heavy demand for steel in other industries has affected enamel ware.

Building material and equipment sales by Mart firms were reported to have increased in October by 36% over the preceding month, and by 38% over October of last year.

Engineers Relate a 'Personal History' of Those Pioneer Days

(Concluded from Page 11, Column 5)

real earnest, however, G-E wanted to know how the new idea was catching on throughout the country—and this task was given Mr. Stevenson. He combed the nation, interviewing utility men, dealers, inventors, and others who might figure in on the electric refrigeration scheme, got their reactions—and only then went to Fort Wayne, where he saw the product.

About 100 units were produced for test purposes. Then, in 1925, G-E turned its refrigeration problem over to Chris Steenstrup, supervisor of mechanical research at Schenectady. The company decided on the hermetic unit as a means of attaining large-scale sales without servicing worries. Under Mr. Steenstrup's supervision, the "Monitor Top" was developed, and G-E started on its way to a commanding position in the field.

One of the industry's biggest boosts, Mr. Stevenson said, was the development of the all-steel cabinet, which he attributed to Bill Merrill and Jim Knight of General Electric. Icebox cabinets, used up to that time, were good enough to hold temperatures of 60 or 65° F., but there was just no bringing the temperature down around 40° F.

Instead of buying a cabinet company, as many persons had advised, G-E decided to turn the problem over to the two men named above—men who didn't have to unlearn a lot of preconceived notions about cabinet manufacture. The all-steel cabinet was the result.

Mr. Stevenson, in closing, voiced Mr. Steenstrup's regret at being unable to attend the meeting because of illness.

'We're Still Learning,' Philipp Reminds

Dr. L. A. Philipp, chief engineer of Kelvinator, declared that he had picked up the gauntlet where Frank Riley dropped it, and was still trying to run with it.

"The present refrigerator is unquestionably a refinement of those early machines," he commented, "but it is far from a finished product yet. Remarkable progress has been made in the past, but the period of development and advancement and refinement is far from over. It exists at present and it will continue to exist for many years to come."

Muffly Has Praise For 'Doorbell-Ringers'

Praise for the "doorbell-ringers," the salesmen who by their efforts have placed the final stamp of success on the household refrigeration industry, was voiced by Glenn Muffly, veteran Springfield, Ohio, inventor.

Disclaiming the rank of pioneer, Mr. Muffly asserted that he had watched the industry from the automotive sideline as far back as 1908, and had entered it actively only after its development into a sound commercial proposition. One of his earliest contacts with refrigeration, he recalled, was in 1908, when the organization he was then with wanted a refrigerating unit to cool a freight car.

He bumped into the industry again in 1914, when he saw, in a Chicago aircraft engine factory, a refrigerating unit developed by a man who had lost his own company and was then operating a lathe. Broke or not, this mechanic was still interested in refrigeration—and he got Mr. Muffly interested in it. So he started looking around from both sales and engineering standpoints.

One of his calls was on the publishers of the Saturday Evening Post, who had already surveyed the field and as a result wouldn't accept any advertising on the new equipment. Another was on the Automatic Refrigerating Co. of Hartford, Conn., which then made the only automatic machine on the market, in that it was controlled automatically and did not require the attention of a resident engineer.

A talk with Deane Perham, the company's chief engineer, developed the fact that there were a number of mechanical worries, not the least of which was the necessity of developing a smaller expansion valve than was then available. These and other things convinced Mr. Muffly that refrigeration offered real opportunities—so he went into it full-time.

Frigidaire's first Chicago salesroom was in the "Loop" area, he recalled, and he used to hang around the display window at night to hear what people said about the new electric cold-making device. He remembered that, on one occasion, a man and woman stopped to inspect the display; and the woman, after spelling out the name, "Frigidaire," said: "Frigidaire? What is it? Anything like Freezone (corn cure)?"

'Experts' Were Scarce When Keilholz Started

Lester Keilholz, former chief engineer for Frigidaire, made his entry into electric refrigeration in 1921. He was then chief engineer for Delco-Light and one day he was told that "you are now chief engineer for Frigidaire as well as Delco." To get his new baby under way he was told to "hire the best men you can get." Mr. Keilholz asked where he was supposed to get these "refrigeration experts," and was told to run advertisements, conduct interviews until he located his staff.

"We got under way," said Mr. Keilholz, "and about 1923 we heard that some of the 'deans' of refrigeration were meeting in New York to hatch up a code. These men met and would pound the table, protesting that 'it can't be done.' I was sent down to keep the 'gadgets' off the machines. The young men there, I believe, did succeed in protecting the future growth of the infant industry.

"In those days," he continued, "the sales of household refrigerators were increasing two and one-quarter times each year. If that growth continued, the refrigeration business would have all the money in the world by now."

Two factors were named by Mr. Keilholz as contributing most to the early growth of household electric refrigeration. The first, he said, was the service shut-off valve that enabled the service man to make a quick and efficient service job; the second was the development of an efficient, low-priced electric motor.

"Frank West," Mr. Keilholz said, "saved the refrigeration industry millions when he perfected his 'Shelvador' and sold it to Crosley. This took the minds of industry engineers and designers off sealed valves and proper refrigerants for a time, and turned to thought of public acceptance of the electric refrigerator.

"Millions are ahead in this industry in both the refrigeration and air-conditioning divisions," Mr. Keilholz predicted, "if the costly sideroads are avoided and a straight road is followed."

George Bright Recalls When 'Size' Was 'Quality'

George Bright (head of Detroit Ice Machine Co. and a veteran if ever there was one) who was introduced as an industry diplomat and politician, often a liason agent for participants in the innumerable squabbles arising between various industry groups, observed that "competition hasn't changed much in the ice machine business."

"As early as 1894," he explained, "some 34 advertisements of ice machines appeared in the pages of Ice & Refrigeration. Only four of the advertising companies exist today, but new firms have sprung up to take the place of those which have dropped out.

"The 'early birds' in the refrigeration industry didn't worry about B.t.u. and fancy formulas," Mr. Bright continued, "they just went out and built the machines they needed.

"There was a great deal of competition between manufacturers of horizontal and vertical machines, but makers of both types of machines agreed in taking great pride in the size of their products.

"They operated on the theory that the bigger an ice machine was the better it must be. It was this theory which accounted for the three-story-high jobs that appeared not infrequently at that time. Back in those days a 60,000-lb. flywheel was considered small.

"Production of machines in the early days was much more difficult than it is at the present time," he reminded the group, "for the manufacturers had to make every single part that went into their units. Parts and equipment manufacturers, as such, were unknown.

"Ice, of course, was the real competition in the early days, and one outfit even had an automatic refrigeration system which used ice as a refrigerant. For cold storage plant applications, mechanical refrigeration couldn't touch this method.

"Greatest factor in the development of mechanical refrigeration," Mr. Bright solemnly opined, "was the passing of the old-fashioned outhouse.

"Back in the good old days," he explained, "ice was harvested from creeks and rivers. There was very little manufactured ice.

"But pollution of streams by sewerage forced the development of some satisfactory substitute for natural ice. The answer, obviously, was manufactured ice."

Speaking of his own entry into the refrigeration field, Mr. Bright explained that he came into the business "on the tail end of an ice wagon." It seems that he used to sell ice for the local ice company in the little West Virginia town that he hailed from.

Mr. Bright added another chapter to the book of "It Can't Be Done" stories when he told of attending an ice convention sometime during the early 1900's at which an industry executive predicted that it would never be possible to ship ice south of the Mason-Dixon line.

"We old timers have had our day," Mr. Bright concluded, "and now it's the younger fellows who hold the key to the industry's future. They are pushing along with their achievements and mistakes just as we did when we started out, and their reminiscences 20 years from now should be extremely interesting."

A Pioneer Serviceman Recalls Early Days

Among the old-timers at the meeting was Jim Haviland, one of the earliest of the industry's present army of service men, who related some of his experiences in the early days with men who today are ranked with the pioneers in the field. Mr. Haviland is now associated with J. M. Oberc, Inc., Detroit supplies jobber.

Refrigeration Museum Contributions Asked

Closing the meeting, F. M. Cockrell, publisher of the NEWS, asked those present to assist in the task of assembling early-industry material for the Refrigeration Museum. He pointed out that many historically valuable pieces of equipment now in existence in plants, offices, or shops throughout the country ought to be preserved for future students of the industry as well as the public in general.

Much of this equipment may be lost, he declared, unless it is brought together in one display. This is the purpose of the Refrigeration Museum, he said. He offered the services of the NEWS in receiving, cataloging, and caring for this equipment until such time as a permanent repository for it is decided upon.

Air Conditioning

Engineer Traces Industry History; Predicts Trend To Lighter Units

By A. E. Stacey, Jr.,* Buensod-Stacey Air Conditioning, Inc.

Before the year 1900, large plants were heated either by steam pipe coils along the walls or by a fan system with all of the heating surface in one location. Many of the smaller plants were still heated by stoves (with the attendant fire hazard), sparsely distributed through the working areas.

The need of humidifying, as well as heating, was recognized in the textile industries. Open steam pots were responsible for the earliest laws limiting the temperature and relative humidity in places where people work.

Ventilation during this period, largely through ignorance, was limited to alleviating conditions of annoyance such as the removal of large volumes of steam or fumes, which were irritating to the mucous membrane. Little was known of the seriousness of industrial poisons.

About 1904, a spray type humidifier of the type used today was installed as an addition to a central fan heating system in a cotton mill. This system successfully humidified the mill during the heating season. The air capacity of this system was not sufficient to absorb the heat of summer and machinery to maintain the humidity, although conditions were greatly improved. It was customary to drive the fans for heating systems by steam engines and use the exhaust steam in the heating coils. Many of the engines were direct connected to the fan, although a few were belt driven. This practice has been almost wholly abandoned due to better electric power distribution, difficulty in servicing, and the year around use of the equipment.

'AIR CONDITIONING' COINED

In 1904, Col. Steward W. Cramer of Charlotte, N. C., coined the word "air conditioning." Col. Cramer was a mill owner and operator and so was accustomed to designate as conditioning the addition of moisture to yarns. In a talk before the American Cotton Manufacturers Association on mill humidifying, he spoke of "air conditioning."

The next few years were marked by many developments in the entire field of heating, ventilation, and air conditioning. The use of the fan heating and humidifying systems throughout the year emphasized the need for the development of equipment of higher efficiency to reduce the operating costs. Industrial temperature and humidity control systems were needed and the problem of controlling the dehumidification of air had not been worked out.

Dr. Willis H. Carrier, after developing the spray type humidifier, patented many systems of automatic control. The well known dewpoint control was conceived and used at this time. Other humidity controls were based upon the differential temperature between the dry bulb and the wet bulb, and were located in the rooms controlled.

Col. Cramer was also active in the development of control systems at this time and patented the Parks-Cramer relative humidity controller, which is still being used. Multi-vane fans were introduced into this country from England.

The efficiency of these fans was 60%, which was much higher than the paddle wheel type then in use, which had an efficiency of only 45%. This development has continued over the years so that today there are fans having an efficiency of 70%.

A new type of blast heater made its appearance at this same time to replace the built-up pipe coil heater, with its troublesome leaks and difficulty of handling. Cast iron vento radiation which could be handled in sections and which was inherently leakproof came into use and remained as a standard for many years.

'GOLDEN ERA'

Dr. Carrier developed the spray type dehumidifier, which made possible the control of humidity within a plant below the outside conditions. Before this development, dehumidifying had been accomplished by blowing air over cold coils, which removed the moisture but did not offer a possible method for the close control of humidity needed in many industries.

These six years from 1904 to 1910 might be designated as the "Golden Era" of air conditioning, as in this time there was developed a great proportion of the equipment used today.

Between the years of 1911 and 1915, air conditioning was applied to many industries. The Warner Brothers Instrument Co., maker of precision instruments at Beloit, Wis., made an installation to protect the fine parts from dust and assist in the assembly.

The Woodward Ave. plant of the Ford Motor Co. was air conditioned to make the plant cleaner, but also to keep it cooler in summer for the comfort of the workman. Installations were made in pharmaceutical plants to reduce the humidity in those departments handling deliquescent salts. The moving picture industry was starting and air conditioning was needed to control the temperature in the studios and for drying the developed films.

DUCTWORK CHANGED

During this period, the design of ductwork was entirely changed. Circular ducts were customary practice being simple to fabricate and having a cross section of highest efficiency for the carrying of air. Larger installations caused a problem to find space for the round ducts and it became necessary to use other forms, usually rectangular.

Some owners objected to the rectangular form as the top of the duct would form a dust pocket, while from a round duct the dust would vibrate off. Today, the only circular duct used is in exhaust systems, where there must be no corners with low air velocity.

By 1915, the great World War was on in earnest and the U. S. was busy manufacturing ammunition for the Allies. The fire and explosion hazards in the loading plants were great and special developments were necessary to protect the spread of fire from one department to an adjoining one. Water traps and screens were devised, which proved thoroughly effective.

Another problem developed in the heating of the shells before being loaded with T.N.T. This same problem exists in machine shops doing precision work. The material must be brought to a predetermined temperature and maintained at that temperature during processing.

Probably the majority of the new plants built during the war were heated with direct radiation and the remainder by hot blast. About 1922, a new development in industrial heating appeared. This equipment consisted of a heater section and with one or more fans with motor, fabricated and assembled in a factory and shipped, completely assembled, ready to be mounted in place.

When steam, drain, and electrical connections were made, the equipment could distribute heated air through the surrounding area.

The development of light weight extended fin blast radiation at this time assisted in the rapid evolution of the unit heater.

UNIT CONDITIONERS

A parallel development to the unit heater was the design of unit air conditioners. These units are an expansion of the unit heater, by the addition of a cooling section. A dry filter section and a humidifying section may also be mounted on the same chassis.

Humidifying units are not new. As far back as 1911, there was an excellent one on the market, which for lack of application knowledge did not prove a commercial success. Since that time, the general knowledge of air conditioning has spread throughout the industrial world and the small unit air conditioner offers a practical way of equipping a small plant.

For many years, air filters of the bag type have been available. While these perform the function for which they were designed, they are wholly unsuitable for unit air conditioning design on account of space requirements.

The familiar rectangular filter of today, either of the "throw-away" type or of the paper filter replacement type, has proven quite adequate in most places. There are cases, however, where as nearly complete elimination of dust particles of all sizes as possible is desirable.

Over the years, several experimenters have attempted to design an electrical dust precipitator suitable for air conditioning. No doubt there will be further developments along these lines.

ACOUSTICAL TREATMENT

The world has become sound conscious, and the designer of air-handling equipment is painfully aware of the fact. An immense amount of work has been done in the last few years in quieting all parts of the air-conditioning equipment. Methods of sound control are now known, so that it is possible to estimate to what extent sound treatment must be applied in order to obtain desired results.

Over the years, many changes have been made in the methods of air distribution. From the simple round outlet with its butterfly damper and poor results, there has been a continuous change of outlet design. Each new design has been for the purpose of greater control over the air stream, so today many outlets have both horizontal and vertical diffusion vanes as well as a volume control.

There are outlets designed for low velocity and some for velocities 10 times as high, and each, when properly used, is satisfactory.

There is no doubt that, as mechanical difficulties are overcome, there will be an increase of speed, whether in air velocities through ducts or in the revolutions of moving parts of equipment. This will fulfill the need for smaller space requirements, less weight, and no doubt eventually result in lower first cost.

There may also be expected laws and codes governing permissible temperatures and relative humidities for different industries. Codes will be written on the allowable concentrations of toxic fumes, vapors, and dust particles. In some states today, there are existing codes covering these points.

A great amount of research is being carried on at the present time to determine the physiological reactions of persons at different rates of activity when subjected to various temperatures and humidities.

*Presented at the Production Conference of the American Management Association, held at the Palmer House, Chicago, Nov. 15-16.

New Conversion Burners Announced By Airtemp

DAYTON, Ohio—Two new conversion oil burners, known as models B-10 and C-10, respectively, have been announced by Airtemp, Inc. The two units cover the domestic range of from 1⅓ to 4 gallons of No. 3 fuel oil per hour.

Modernistic in styling, the new burners are finished in harmonizing blue and gray, set off by chromium plated air-adjustment bands, with the same bright metal finish on oil lines, screws, bolts, and fittings.

Trade-In Allowances Set In Crosley Drive

(Concluded from Page 1, Column 1)

for the Crosley company to pick up the old Crosley refrigerator at the time the new one is delivered. A special table of trade-in allowances has been prepared by the company and issued to all dealers. The dealer making the replacement sale is allowed two-thirds of the trade-in allowance granted, absorbing the other third as his total trade-in cost.

Special arrangements have been made with C.I.T. Finance Co., National City Bank, and Eastern Acceptance Corp. to accept the trade-in as the down payment on the new refrigerator when the value of the trade-in equals or exceeds the usual required down payment. Balance of the purchase price is payable on monthly instalments.

The schedule of trade-in allowances offered by Crosley during this drive follows:

Model No.	Exterior Finish	Cash Value
	Year—1932	
C-35	Lacquer	$ 8
C-45	Lacquer	10
C-55	Lacquer	12
	Year—1933	
D-35	Lacquer	$15
D-45	Lacquer	18
D-60	Lacquer	22
	Year—1934	
EA-35	Lacquer	$20
EA-43	Lacquer	24
EA-55	Lacquer	28
E-43	Lacquer	27
E-55	Lacquer	32
E-70	Lacquer	37
	Year—1935	
FR-30	Lacquer	$22
FR-35	Lacquer	25
FR-40	Lacquer	27
FA-35	Lacquer	25
FA-40	Lacquer	27
FA-50	Lacquer	32
FA-60	Lacquer	35
FA-70	Lacquer	39
F-43	Lacquer	30
F-55	Lacquer	34
F-70	Lacquer	42
PFA-50	Porcelain	34
PFA-60	Porcelain	38
PFA-70	Porcelain	42
PF-43	Porcelain	33
PF-55	Porcelain	37
PF-70	Porcelain	45

October Refrigerator Taxes Up 10% Over '38

WASHINGTON, D. C.—Up better than 10% over the same month a year ago, excise tax collections on mechanical refrigerators reached $380,687 during October, according to figures released by the commissioner of internal revenue. October, 1938, collections were $335,154.

Distributors To Get Westinghouse 1940 Plans Next Week

(Concluded from Page 1, Column 5)

build greater consumer acceptance, and an increased effort on sales training.

Newspaper, magazine, and trade paper men will preview the new Westinghouse line at a New York City meeting on Jan. 4. Prior to that time, however, distributors and their salesmen will view the line and the program of sales helps, promotion, and advertising material at a series of meetings in Mansfield during December.

First of these meetings will be the annual distributors' convention on Monday and Tuesday, Dec. 4 and 5. A full two-day program has been arranged, high point of which will be the distributors' banquet on Monday night. Awards for outstanding sales performance will be made at this banquet, which will be held in the Westinghouse plant.

Following this meeting, the Westinghouse district sales personnel will remain in Mansfield for an intensive program of sales planning and promotion on Dec. 6, 7, and 8. For the next three days, Dec. 9, 10, and 11, a national meeting will be held for distributors' salesmen.

Members of the wholesale organization not present at the Mansfield meeting then will be trained and organized for the 1940 territorial development program at district meetings in 15 cities, starting after Dec. 26 and continuing until the January showing to dealers.

Bureau Outlines 1940 Refrigerator Promotion

(Concluded from Page 1, Column 1)

activity also is a part of the bureau's program. Every step in the proposed drive is outlined in detail, including a retail salesman's contest which can be used as described or can be adapted to fit in with any local campaign. Sales training is injected into the plan book in the form of instruction on how to handle the four basic types of electric refrigerator prospects.

Other advertising and promotional material available includes: a full-color window banner, a series of six display sheets for posting on walls or windows or for stand-up window and counter display, a 24-sheet poster, consumer folders, newspaper advertisements which the bureau describes as "key features of the campaign for utility companies," and a series of 20, 50, and 100-word radio spot announcements.

Baker Will Manage Williams' Sales

(Concluded from Page 1, Column 4)

He was the first Ford dealer appointed in Kansas City, Mo., and was quite active in banking circles and civic affairs in that city.

He served for a while as an instructor at Massachusetts Institute of Technology. During the World War he saw service overseas, attaining the rank of captain in the air service. He also was in command of the American detachments with the 55th British Division.

After the war he returned to his business activities, serving in turn as a bank director, a Florida real estate operator, and the owner of an automobile finance company.

His business was among those completely wiped out by the hurricanes which devastated the lower east coast of Florida in 1926 and 1928, but his supervision of relief work following the disaster won an American Legion citation and letters of commendation from the War Department.

Subsequent sales, sales promotion, and management experience has included executive positions with companies in such varied lines as automobile trucks, batteries, dairy products, and heating and ventilating equipment. Prior to his joining the Oil-O-Matic organization, Mr. Baker was general manager of a stoker manufacturing firm.

Kelvinator Christmas Special Model Has More Accessories

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ft. of food shelf area, and a 6.25-cu. ft. capacity.

Including the unrefrigerated vegetable bin, the unit has storage space for five bushels of food, it is claimed. Bottom shelf of the refrigerator is divided, one half serving as a glass cover for the porcelain crisper, and the other half being removable to allow extra room for large articles.

Interior of the unit is porcelain, with rounded corners, and exterior is finished in lacquer. Shelves are tinned, to prevent rusting, and the temperature control has settings of freeze, normal, fast freeze, vacation, defrost, and off.

Hermetically sealed compressor unit is used, and the unit has an ice-freezing capacity of 84 cubes, or 9 lbs., at a freezing. A five-year protection plan on the unit is provided.

One-Day Convention, Four-Days Schooling, Awaits Norge Men

(Concluded from Page 1, Column 1)

in charge of sales, to be followed by a talk by President Howard E. Blood, "The Past, Present, and Future of Norge." Mr. Blood will then introduce the 1940 Norge Rollator refrigerator line, with product explanations by J. M. Tenney, assistant sales manager, assisted by H. H. Whittingham, director of engineering, Ira Reindel, chief refrigeration engineer, and H. L. Spencer, manager of the Muskegon, Mich. refrigerator plant.

J. A. Sterling, merchandise manager, will speak at 11:45 on "The Charted Course to Volume and Profit" and, later in the day, at 2:30 p.m., will present the 1940 merchandising program, including details of advertising and finance. He will be assisted by G. G. Whitney, advertising manager, and R. Blanchard of the sales promotion department.

Afternoon session Monday will begin at 1:45 with Mr. O'Harra presenting the 1940 Norge washers, and a product presentation in detail by E. R. Bridge, washer division sales manager, assisted by D. T. Sickelsteel, manager, washing machine engineering, and C. A. Moore.

Following a brief talk on finance by H. L. Wynegar, W. M. Davis will introduce and explain the 1940 Norge gas ranges, and A. H. Kitson, sales manager of the electric range and water heater division, the 1940 Norge electric ranges. M. T. Bard, sales manager of the commercial division, will present the 1940 story on commercial refrigeration, and display a 15-foot refrigerator.

The afternoon's business will close with a product summary by Mr. O'Harra and final remarks by Mr. Blood.

At 8 p.m. Monday the annual distributor banquet will be held at the Detroit-Leland hotel. There will be professional entertainment and no speakers.

Beginning Tuesday morning at 9:30 at the Detroit-Leland hotel, the four-day merchandising clinic will be conducted, ending Friday. The clinic, which Mr. O'Harra calls "an advanced collegiate course in the profitable operating of wholesale territories and sales management," will offer attending distributor personnel complete and detailed information on all Norge 1940 products, and will include a "post-graduate" course in appliance merchandising conducted by Norge executives in cooperation with nationally known authorities outside its own organization.

At Tuesday's clinic, after an address of welcome by Mr. Blood at 9:30, and an explanation of the objectives of the clinic by Mr. Sterling, Arthur Hirose of the McCall magazine organization will speak on "Facts Worth Remembering." Following Mr. Hirose, Mr. Sterling will talk on "Advertising and the Product," and Mr. Davis on "The Sales Story of Norge Refrigeration." The afternoon program will be devoted to product detail.

On Wednesday, L. E. Moffatt, editor of Electrical Merchandising, will address the clinic on the subject of "The Refrigeration Market," and the product detail story will be continued. Beginning Wednesday afternoon, written examinations will be given all distributor personnel present, with awards for those showing the highest marks in the test. Wednesday will also see the opening of the daily "question clinic," at which distributor's questions will be received and answered by a clinic staff composed of Norge engineers.

Frank E. Watts, vice president of Electrical Dealer, will speak Thursday morning on "The Opportunity Ahead in the Washing Machine Industry."

Friday morning, Thomas H. Beck, president of Crowell Publishing Co., will deliver a speech on "Salesmanship," and that afternoon, at the final session of the merchandise clinic, Tom McLoughlin, sales promotion manager for Saturday Evening Post, will give a talk on "National Advertising," in which he will enlarge on what national advertising means to a sales organization and how it can be used in selling most effectively.